ORDER NO. EMID871205

Service Manual

MIDI PCM ORCHESTRA
SM-AC30

(EN), (EI), (EH), (EB), (EF), (EZ),
(EW), (EK), (XL), (XR), (XS), (X)

AREAS

(EN):	Norway, Sweden, Denmark, Finland	(EK):	the United Kingdom
(EI):	Italy	(XL):	New Zealand
(EH):	Holland	(XR):	Australia
(EB):	Belgium	(XS):	Malaysia, Singapore, South Africa
(EF):	France, Austria	(X):	the Middle East, Indonessia, Hong Kong, the Philippines Taiwan
(EZ):	Germany		
(EW):	Switzerland		

Specifications

ONE TOUCH PLAY		○
FULLBAND SETTING COMPUTER		FSC, RECORD*
PLAY SEQUENCER		BASS, A, B, SOLO, RECORD*
VOICE SETTING COMPUTER		SET, 1~7, CANCEL 16×2 COMBINATION (RHYTHM) RECORD*
ORCHESTRAL CONDUCTOR		A: POLY, SPECIAL, SOLO B: POLY, SPECIAL, SOLO
A TONES	POLY	PIANO, ELECTRIC PIANO, HARPSICHORD, CLAVI, JAZZ GUITAR, HAWAIIAN GUITAR, SYNTH, ACCORDION, TROMBONE, CLARINET, STRINGS, SAXOPHONE, ORGAN (RECORD*, 10 ORGAN PRESETS) TAB VOICES: FLUTE 16′, 8′, 4′, 2′ A POLY VOLUME
	SPECIAL	PIANO, ELECTRIC PIANO, HARPSICHORD, CLAVI, JAZZ GUITAR, GUITAR, SYNTH, FRENCH HORN, SAXOPHONE, TROMBONE, TRUMPET, VIBRAPHONE, SPECIAL VOLUME
	SOLO	FLUTE, PAN FLUTE, SYNTH, CLARINET, SAXOPHONE, TROMBONE, TRUMPET, VIOLIN, SOLO VOLUME
B TONES	POLY	PIANO, ELECTRIC PIANO, HARPSICHORD, SYNTH, JAZZ GUITAR, TROMBONE, STRINGS, SAXOPHONE, ORGAN (RECORD*, 10 ORGAN PRESETS) TAB VOICES: FLUTE 8′, 4′, 2′ B POLY VOLUME
	SPECIAL	○ (A/B)
	SOLO	○ (A/B)
BASS TONES		BASS 16′, BASS 16′ +8′, BASS 8′, SYNTH BASS, ACOUSTIC BASS, CHOPPER BASS, ELECTRIC BASS, TUBA, BASS VOLUME
EFFECTS	SUSTAIN	A, A/B SPECIAL, B, BASS
	CHORUS	A POLY, A/B SPECIAL, A/B SOLO, B POLY
	TREMOLO	
	CELESTE	
	GLIDE	FOOT CONTROLLER (OPTIONAL)

TECHNI-CHORD		ON, CLOSE/PROGRAM, RECORD*
RHYTHM	SELECTORS	MARCH, BALLAD, 8 BEAT, CHA CHA, RHUMBA, JAZZ WALTZ, WALTZ, TANGO, SAMBA, BOSSA NOVA, DISCO I, DISCO II, 16 BEAT, SALSA, SWING, SHUFFLE
	CONTROLS	SYNCHRO & BREAK, START/STOP, TEMPO, DRUMS VOLUME
FILL IN & INTRO		I, II, SOLO
ENDING		ON
BASS & ACCOMP		I/II, MELODIC, ACCOMP VOLUME
PLAY MODE		PCC, FINGERED, MEMORY
PROGRAM CHORD COMPUTER		PCC, 𝄞, ◄, ►, ⌒, ⌒, ⊢⊣, 𝄋 𝄌, D.S, —𝄂, ⊂⊃, ⊣ ⊢, RECORD*
TRANSPOSE		CONTROL (G~C~F#)
TUNING		○
FOOT CONTROLLER (OPTIONAL)		FILL IN, ENDING, GLIDE, SUSTAIN (PROGRAM FUNCTION)
MODE SET		MODE SET, MIDI CLOCK, START/STOP, SONG SELECT, SUSTAIN, EFFECT, PROGRAM CHANGE, OCTAVE, MEDLEY, RECORD*
FUNCTION SELECTOR		1~20 (INITIAL)
OTHERS		POWER SWITCH, MAIN VOLUME, AC CORD INPUT, EXP PEDAL JACK, FOOT SW JACK, FOOT CONTROLLER JACK, HEADPHONE JACK, LINE OUT JACKS, SEPARATED LINE OUT (BASS JACK, DRUM PERCUSSION JACKS, MAIN MIX SELECTOR), AUX IN JACK, MIDI TERMINALS (THROU, OUT, IN) EXT I/O (FD) TERMINAL
POWER REQUIREMENT		27W
		AC 120/220/240V 50/60Hz AC 120V-NORTH AMERICA
DIMENSIONS (W×H×D)		48.4cm×17.7cm×38.2cm (19-1/16″×6-31/32″×15-1/32″)
NET WEIGHT		8.8kg (19.4lbs)

∗Common RECORD button is used for these buttons.
- Specifications are subject to change without notice for further improvement.

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

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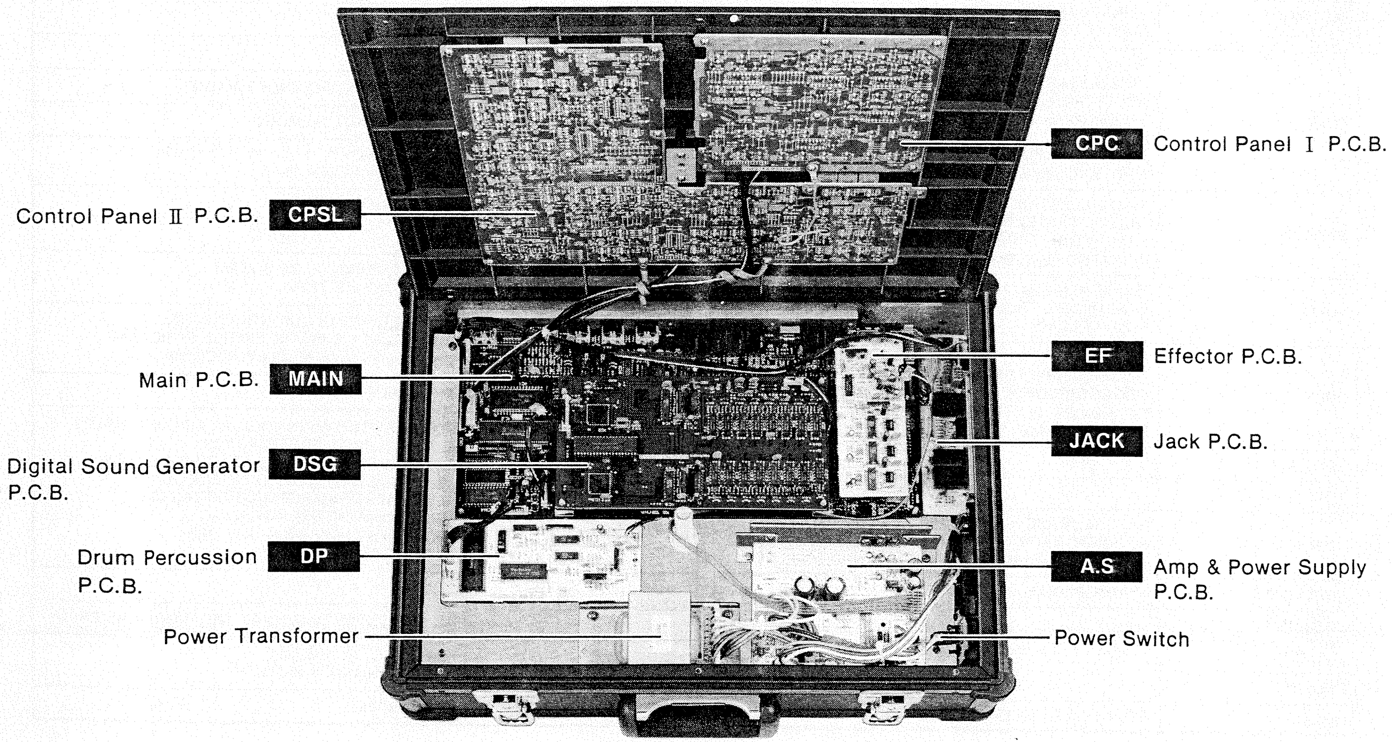
PARTS LOCATION


CPC Control Panel I P.C.B.
Control Panel II P.C.B. CPSL
EF Effector P.C.B.
Main P.C.B. MAIN
JACK Jack P.C.B.
Digital Sound Generator P.C.B. DSG
Drum Percussion P.C.B. DP
A.S Amp & Power Supply P.C.B.
Power Transformer
Power Switch

[Photo-1]

SETTING UP

Connections

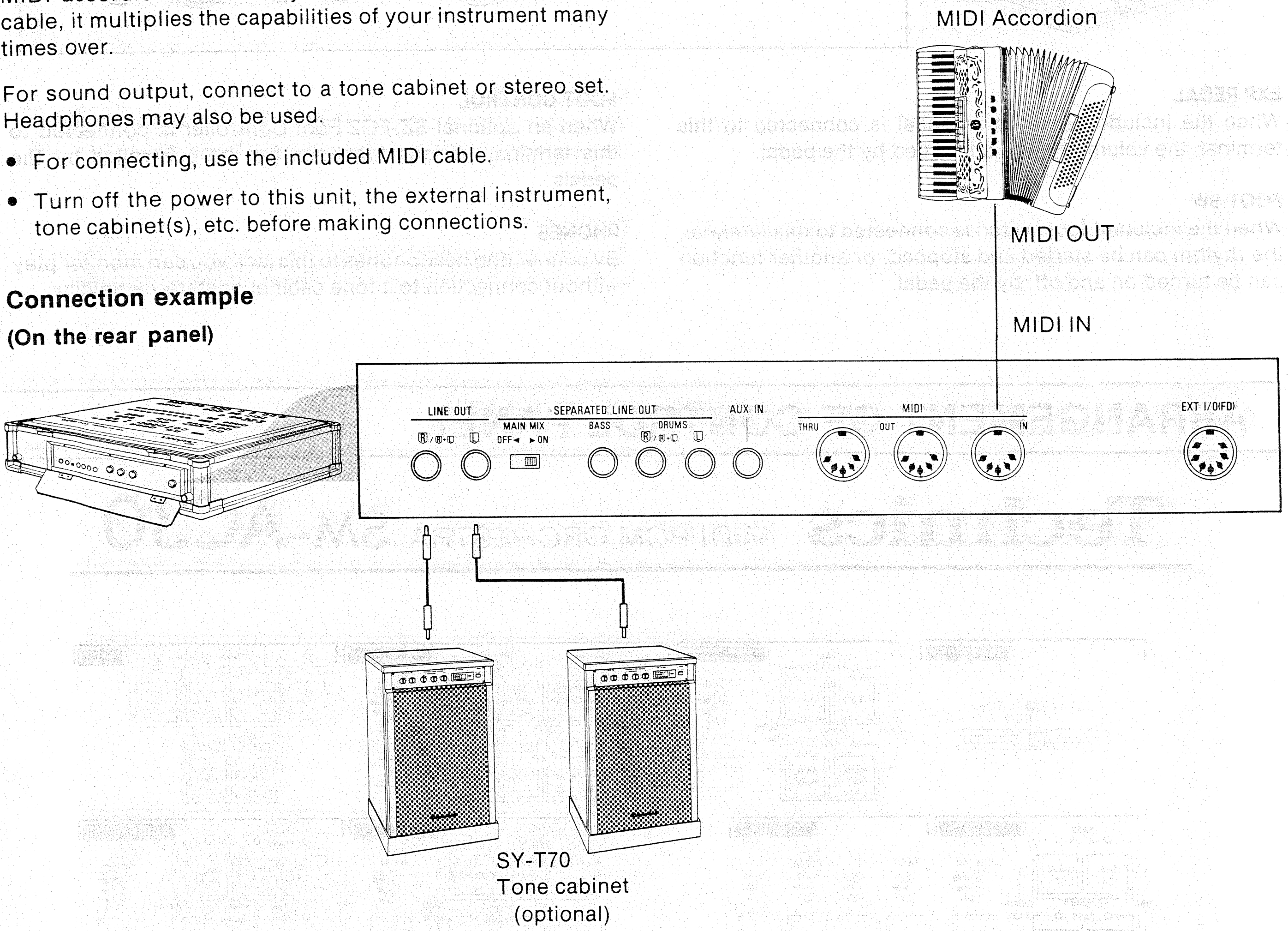
The SM-AC30 is a PCM (Pulse Code Modulation) Orchestra module which is controlled by the MIDI signal from an external instrument. When connected to, for example, your MIDI accordion or MIDI keyboard with the included MIDI cable, it multiplies the capabilities of your instrument many times over.

For sound output, connect to a tone cabinet or stereo set. Headphones may also be used.

- For connecting, use the included MIDI cable.
- Turn off the power to this unit, the external instrument, tone cabinet(s), etc. before making connections.

Connection example

(On the rear panel)



LINE OUT
Connect a tone cabinet or stereo set here for sound output. If connecting a monaural amplifier, connect to the R/R+L terminal.

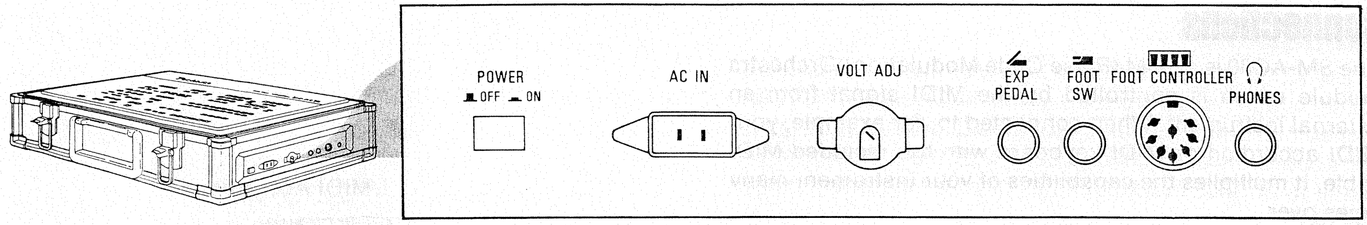
SEPARATED LINE OUT
The **BASS** and **DRUM PERCUSSION** can be output independently. When the **MAIN MIX** selector is set to **ON**, the **BASS** and **DRUM PERCUSSION** signals are also output from the **LINE OUT** terminal. With **MAIN MIX** set to **OFF**, the **BASS** and **DRUM PERCUSSION** signals are output only from the **SEPARATED LINE OUT** terminal.

When not using the **SEPARATED LINE OUT** terminals, be sure the **MAIN MIX** selector is set to **ON**.

AUX IN (input level 150 mV, 10 kΩ)
Among the many items which can be connected to this are tape/disc pre-amps, portable synthesizers, etc.

EXT I/O (FD)
An optional digital disk recorder (SY-FD5) may be connected to this terminal for the storage of longer music performances or groupings of songs.

(On the right side panel)


POWER
OFF ON
AC IN
VOLT ADJ
EXP PEDAL
FOOT SW
FOOT CONTROLLER
PHONES

EXP PEDAL
When the included expression pedal is connected to this terminal, the volume can be controlled by the pedal.

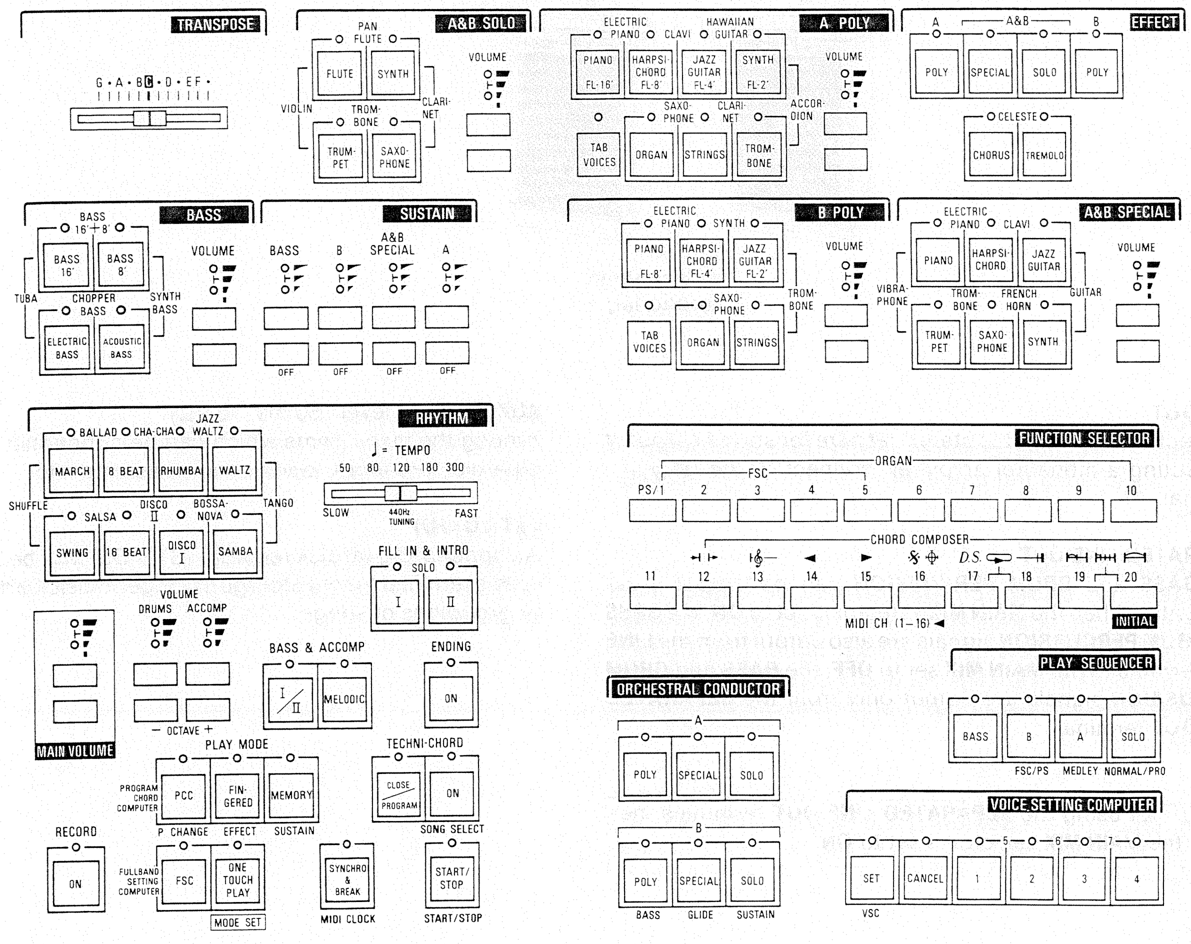
FOOT SW
When the included foot switch is connected to this terminal, the rhythm can be started and stopped, or another function can be turned on and off, by the pedal.

FOOT CONTROL
When an optional SZ-FC2 Foot Controller is connected to this terminal, various functions can be controlled by the pedals.

PHONES
By connecting headphones to this jack you can monitor play without connection to a tone cabinet or stereo amplifier.

ARRANGEMENT OF CONTROL PANEL

Technics MIDI PCM ORCHESTRA SM-AC30


TRANSPOSE
A&B SOLO
A POLY
EFFECT
BASS
SUSTAIN
B POLY
A&B SPECIAL
RHYTHM
FUNCTION SELECTOR
MAIN VOLUME
ORCHESTRAL CONDUCTOR
PLAY SEQUENCER
VOICE SETTING COMPUTER
INITIAL
FLUTE
SYNTH
TRUMPET
SAXOPHONE
VIOLIN
TROMBONE
CLARINET
VOLUME
PIANO FL-16'
HARPSICHORD FL-8'
JAZZ GUITAR FL-4'
SYNTH FL-2'
TAB VOICES
ORGAN
STRINGS
ACCORDION
POLY
SPECIAL
SOLO
CHORUS
TREMOLO
CELESTE
BASS 16'
BASS 8'
ELECTRIC BASS
ACOUSTIC BASS
TUBA
CHOPPER BASS
SYNTH BASS
OFF
MARCH
8 BEAT
RHUMBA
WALTZ
SWING
16 BEAT
DISCO I
SAMBA
TEMPO
SLOW
FAST
FILL IN & INTRO
BASS & ACCOMP
ENDING
MELODIC
ON
PLAY MODE
PCC
FINGERED
MEMORY
TECHNI-CHORD
RECORD
FSC
ONE TOUCH PLAY
SYNCHRO & BREAK
START/STOP
MIDI CLOCK
MODE SET
SONG SELECT
P CHANGE
EFFECT
SUSTAIN
ORGAN
FSC
CHORD COMPOSER
MIDI CH (1-16)
PS/1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
FSC/PS
MEDLEY
NORMAL/PRO
GLIDE
SET
CANCEL
1
2
3
4
VSC

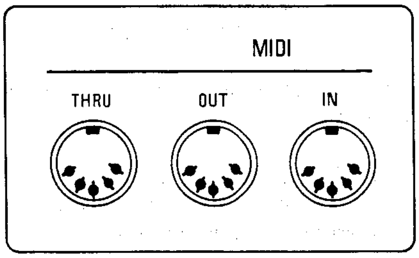
MIDI Terminals

IN: The terminal that receives data from external equipment.
OUT: The terminal that transmits data from the PCM Orchestra to external equipment.
THRU: The terminal that transfers data from the **IN** terminal directly to other equipment.

- Use a 5-pin DIN cord (less than 15 m long) for these connections.

The PCM Orchestra can transmit or receive data for **A**, **B**, **BASS** and **SOLO** parts.

- When the PCM Orchestra is connected to other equipment in a loop (**IN→OUT**, **OUT→IN** connection), the PCM Orchestra may not operate properly. In this case, eliminate one of the connections.



The following data can be received.

[Connect the **IN** terminal of this instrument to the **OUT** terminal of the external equipment.]

- **Keyboard On/Off Data of External Equipment**
  The sound for this instrument can be heard by playing the external equipment.
- **Program Change Data**
  The tones for this instrument can be selected by operating the external equipment.
  - The **VOICE SETTING COMPUTER** (**VSC**) is selected for the **A** part; no voice is selected for the **B** part.
- **MIDI Clock Signal**
  You can play this instrument in synchronization with the clock on the external equipment (**MIDI** clock mode).
- **Effect Data, Sustain Data**
  The effect and sustain for this instrument can be controlled by operating the external equipment. (Only **A** and **B** parts can be controlled.)
- **Start/Stop Data**
  You can start and stop this instrument from the external equipment.
- **FSC (when loading) Number**
  By operating the external equipment, the **FSC** for this instrument can be selected.

The following data can be transmitted.

[Connect the **OUT** terminal of this instrument to the **IN** terminal of the external equipment.]

- **Keyboard On/Off Data**
  The sound from the external equipment can be heard by using the **PLAY SEQUENCER**.
- **Program Change Data**
  The tone for the external equipment can be selected by operating the tone buttons for this instrument.
  - The following buttons are used to select voices for each part.

A part	**A POLY** voice buttons
B part	**B POLY** voice buttons
BASS part	**BASS** voice buttons
SOLO part	**SOLO** voice buttons

- **Internal Clock Signal**
  You can synchronize the external equipment with this instrument (internal clock mode).
- **Effect Data, Sustain Data**
  The effect and sustain of the external equipment can be controlled by operating the **EFFECT** and **SUSTAIN** buttons for this instrument. (Only **A** and **B** parts can be controlled.)
- **Start/Stop Data**
  You can start and stop the external equipment from this instrument.
- **FSC (when loading) Number**
  The song of the external equipment can be selected by loading the **FSC** for this instrument. (By using the **FUNCTION SELECTOR** number buttons **1~20**, song select numbers 0~19 can be sent.)

- These data cannot be received by some equipment.
- When connected to equipment that has a hold function, the **SUSTAIN** buttons for this instrument will work with this function to hold a note indefinitely.

MIDI Mode Setting

When using MIDI signals, set the **MIDI** mode as follows:

- **Basic Channel Designation**
  Basic channels numbered from **1** to **16** are available for MIDI signals. The channels on the transmission side and receiving side must match before keyboard on/off data, tone data, effect data and sustain data can be transmitted and received.
  - Set the necessary basic channel number for each **A**, **B**, **BASS** and **SOLO** part.
- **Clock Selection**
  Select the internal clock when playing in time with this instrument's clock. Select the **MIDI** clock when playing in time with the external equipment clock.
  - When the **MIDI** clock is selected, the rhythm can only be started if **MIDI** clock is received from external equipment.
- **Program Change, Effect, Sustain, Start/Stop**
  Whether or not the data for each of these items is transmitted or received can be set.
  - Except for **START/STOP**, each can be set individually.

<Procedure>

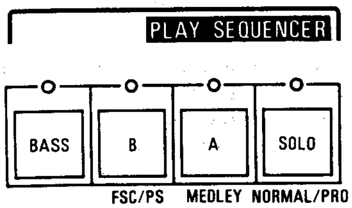
1 Press the **RECORD** button. The indicator will flash.

2 Press the **MODE SET** button. The indicator will flash slowly. The MIDI set mode is now functioning.

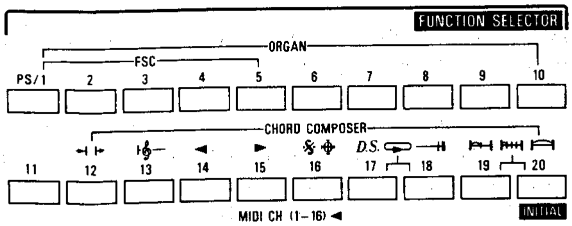
3 Set the necessary mode.

I. Setting by parts for basic channel, program change, effect, sustain

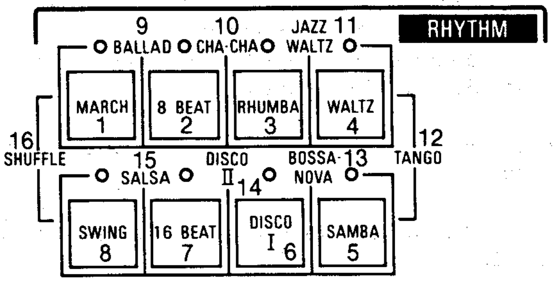
1. Choose the part to be set with the **PLAY SEQUENCER** buttons as shown below.


PLAY SEQUENCER
BASS
B
A
SOLO
FSC/PS
MEDLEY
NORMAL/PRO

2. Press the **FUNCTION SELECTOR** number button (**1** to **16**) corresponding to the basic channel number set for the part.

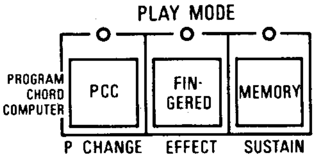

FUNCTION SELECTOR
ORGAN
FSC
PS/1
2
3
4
5
6
7
8
9
10
CHORD COMPOSER
D.S.
11
12
13
14
15
16
17
18
19
20
MIDI CH (1–16) ◄
INITIAL

- The **RHYTHM** button indicators will light to indicate the number of the basic channel.


RHYTHM
9 BALLAD
10 CHA-CHA
JAZZ 11 WALTZ
MARCH 1
8 BEAT 2
RHUMBA 3
WALTZ 4
16 SHUFFLE
12 TANGO
15 SALSA
DISCO II 14
BOSSA-NOVA 13
SWING 8
16 BEAT 7
DISCO I 6
SAMBA 5

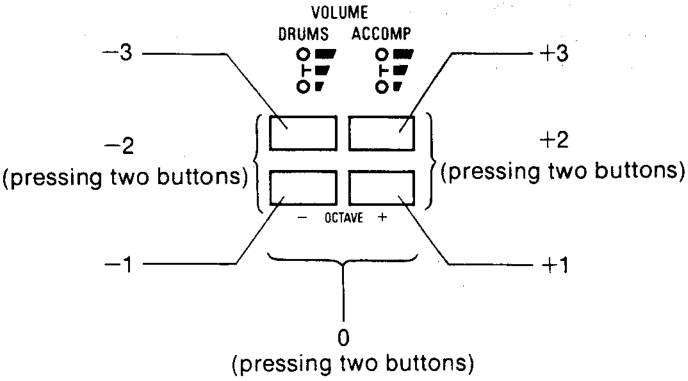
- Multiple parts cannot be assigned to the same basic channel. When a **FUNCTION SELECTOR** number button for a basic channel that has already been designated is pressed, an error sound is heard.
- In the initial mode, the parts are preset as follows: **A**...1, **B**...2, **BASS**...3, **SOLO**...4.

3. For the part of the program change, effect or sustain desired, turn on the corresponding button for transmission or reception and turn off the others.


PLAY MODE
PROGRAM CHORD COMPUTER
PCC
FIN-GERED
MEMORY
P CHANGE
EFFECT
SUSTAIN

- Only the **A** and **B** parts for effect and sustain can be set.

4. **Octave Shift**
   Each part can also be shifted as far as 3 octaves up or down.
   MIDI IN and **MIDI OUT** octave shifts are interrelated. If **OUT** is +1, **IN** is automatically set to −1.
   Use the **DRUMS** and **ACCOMP** buttons of the **VOLUME** control to set the octave shift.

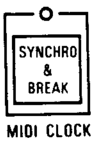

VOLUME
DRUMS
ACCOMP
−3
+3
−2
(pressing two buttons)
+2
(pressing two buttons)
− OCTAVE +
−1
+1
0
(pressing two buttons)

5. Repeat steps **1** through **4** for other parts.

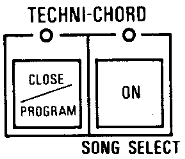
II. Setting for clock, song select and start/stop

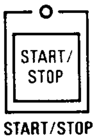
■ Set the clock by pressing the **MIDI CLOCK** button.

- The internal clock is set when the button is turned off and the MIDI clock is set when the button is turned on.



■ Whether data for **SONG SELECT** and **START/STOP** are transmitted/received is determined by the on or off state of the respective buttons.





4 Press the **RECORD** button to turn it off.

- When the **POWER** to this instrument is turned off and then on again, the clock is set to the internal mode. All information except the clock remains the same as it was before the power was turned off.

Storage of parts

The data regarding any parts to be transmitted or received can be stored in the **VOICE SETTING COMPUTER** and recalled by simply using the **VOICE SETTING COMPUTER** buttons.

- When the **CANCEL** button on the **VOICE SETTING COMPUTER** is pressed, the data for all parts are transmitted or received.

<Procedure>

1. Press the **RECORD** button. (Its indicator will flash.)
2. While holding down one of the **VOICE SETTING COMPUTER** buttons, turn on the buttons corresponding to the part to be transmitted or received (see MIDI Mode Setting, above).
3. Turn off the **RECORD** button to complete storage.

- Other arrangements can be stored in the same way using the other **VOICE SETTING COMPUTER** buttons.
- Storage can be continued by pressing another **VOICE SETTING COMPUTER** button instead of the **RECORD** button in step **3**.

Instrument Sound Off Mode

Sound output from the **LINE OUT** terminal of this instrument can be turned off when the instrument is connected with the **MIDI** terminal to an external instrument for sound reproduction.

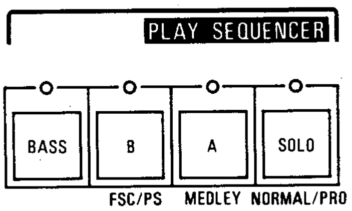
- The on or off condition of each part (**A**, **B**, **BASS**, **SOLO**) can be set, and the settings can be stored in the respective **VOICE SETTING COMPUTER** buttons.

<Procedure>

Setting each part

1. Press the **RECORD** button.
2. Press one of the **VOICE SETTING COMPUTER** buttons.
3. With the **FSC** button held down, press the button for the desired part as shown below to enable or disable audio output.

- The part whose indicator is lit will be output.



4. Press the **RECORD** button to turn it off.

Turning the sound off mode on/off

1. Press the **RECORD** button.
2. With the **FSC** button held down, press the **SET** button of the **VOICE SETTING COMPUTER** to turn the sound off mode on. With the **FSC** button held down, press the **CANCEL** button of the **VOICE SETTING COMPUTER** to turn the sound off mode off. (The **RECORD** button automatically turns off.)

- The sound off mode is cancelled when the **POWER** is turned off and on again, and when the initial mode is reset.

Loading stored MIDI data

All MIDI data that have been set can be stored in the PCM Orchestra's memory or in devices such as an optional digital disk recorder simply by performing storage procedures for the **PLAY SEQUENCER** or the **FULLBAND SETTING COMPUTER**. However, these stored MIDI settings cannot be recalled for playback in the initial mode. Follow the procedure below in order to recall these stored MIDI settings for playback.

1. Press the **RECORD** button. The indicator will flash.
2. Press the **MODE SET** button. The indicator will flash slowly.
3. Press the **FSC** button on.
4. Press the **RECORD** button to turn it off.

- If the **POWER** is turned off, then on again, the **FSC** will be turned off.

MIDI Implementation Chart

Technics MIDI PCM Orchestra
[SM-AC30]

(Transmitted)

Function...		**A**	**B**	**bass**	**solo**	**Remarks**
Basic Channel	Default Changed	1~16 1~16	1~16 1~16	1~16 1~16	1~16 1~16	memorized
Mode	Default Messages Altered	3 × ——	3 × ——	3 × ——	3 × ——	
Note Number	True voice	36~127 ——	36~119 ——	36~84 ——	36~127 ——	Including the use of Octave Shift
Velocity	Note ON Note OFF	× × (9nH:V=0)	× × (9nH:V=0)	× × (9nH:V=0)	× × (9nH:V=0)	
After Touch	Key's Ch's	× ×	× ×	× ×	× ×	
Pitch Bender		×	×	×	×	
Control Change	64	*○ ×	*○ ×	×	×	sustain
	92	*○ ×	*○ ×	×	×	tremolo
	93	*○ ×	*○ ×	×	×	chorus
	94	*○ ×	*○ ×	×	×	celeste
Prog Change	True #	*○ × ——	*○ × ——	*○ × ——	*○ × ——	
System Exclusive		×				
System Common	Song Pos Song Sel Tune	× *○ × ×				
System Real Time	Clock Commands	○ *○ ×				
Aux Messages	Local ON/OFF All Notes OFF	× ○	× ○	× ○	× ○	
	Active Sense Reset	○ ×				
Notes		*○ × .... Whether or not the data for each of these items is transmitted can be set.				

Mode 1: OMNI ON, POLY **Mode 2:** OMNI ON, MONO
Mode 3: OMNI OFF, POLY **Mode 4:** OMNI OFF, MONO

○ : Yes
× : No

MIDI Implementation Chart

Technics MIDI PCM Orchestra
[SM-AC30]

(Recognized)

Function...		**A**	**B**	**bass**	**solo**	**Remarks**
Basic Channel	Default	1~16	1~16	1~16	1~16	memorized
	Changed	1~16	1~16	1~16	1~16	
Mode	Default	3	3	3	3	OMNI OFF POLY Mode
	Messages	×	×	×	×	
	Altered	——	——	——	——	
Note Number		35~119	36~119	24~119	48~107	Changes depending on the position of the Transpose slide control or Octave Shift.
	True voice	36~119	36~119	**36~107	48~107	
Velocity	Note ON	×	×	×	×	
	Note OFF	× (9nH:V=0)	× (9nH:V=0)	× (9nH:V=0)	× (9nH:V=0)	
After Touch	Key's	×	×	×	×	
	Ch's	×	×	×	×	
Pitch Bender		×	×	×	×	
Control Change	64	*○ ×	*○ ×	×	×	sustain
	92	*○ ×	*○ ×	×	×	tremolo
	93	*○ ×	*○ ×	×	×	chorus
	94	*○ ×	*○ ×	×	×	celeste
Prog Change		*○ ×	×	*○ ×	*○ ×	
	True #	0~6		0~7	0~7	
System Exclusive		×				
System Common	Song Pos	×				
	Song Sel	*○ ×				
	Tune	×				
System Real Time	Clock	○				
	Commands	*○ ×				
Aux Messages	Local ON/OFF	×	×	×	×	
	All Notes OFF	○	○	○	○	(123~127)
	Active Sense	○				
	Reset	×				
Notes		*○ ×......... Whether or not the data for each of these items is received can be set. **Changes depending on the selected voice.				

Mode 1:	OMNI ON,	POLY	**Mode 2:**	OMNI ON,	MONO	○ : Yes
Mode 3:	OMNI OFF,	POLY	**Mode 4:**	OMNI OFF,	MONO	× : No

- This product adheres to MIDI specifications as published by the Japan MIDI Association.

PRECAUTIONS BEFORE SERVICING

■ Important safety notice:

Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

■ Measuring of output waveforms

1. The waveform was measured by "National Digital Storage Oscilloscope VP-5730A". Therefore the waveforms of musical tone signals shown may somewhat change due to variation of timing of measure.
2. The voltage shown in the photo is 1/10 of the actual value. However, the actual voltage is 10 times of as shown in this photo.

■ Symptoms which appear to be signs of trouble

The following changes in performance may occur in the Technics PCM Orchestra but do not indicate trouble:

Phenomenon	Remedy
The buttons, etc. malfunction.	Press the FSC button first to turn it on and then press the INITIAL button. • If the buttons, etc. do not return to normal, turn the POWER switch off once, then turn on again.
The rhythm and bass do not sound.	The rhythm and bass do not sound if the MAIN MIX selector on the rear panel is set to OFF when the BASS and DRUM PERCUSSION terminals of the SEPARATED LINE OUT are not used. Move the MAIN MIX selector to ON.
A rhythm does not start or no rhythm sounds.	• No rhythm sounds if the DRUMS VOLUME button is turned off. • The rhythm does not start when you turn on a PLAY SEQUENCER button in which a tune with no rhythm is stored.
The TREMOLO speed is improper.	The TREMOLO speed is adjustable. Adjust to your favorite speed.
The contents of the PROGRAM CHORD COMPUTER, FULLBAND SETTING COMPUTER, etc. cannot be stored.	After pressing the RECORD button, press the necessary buttons within 5 seconds. The RECORD button turns off after a lapse of 5 seconds, making storage operation impossible. Press the RECORD button again.
When storing the created tones and effects in the VOICE SETTING COMPUTER, voices other than those desired are stored.	• To store your created tones and effects, press the 1~7 buttons of the VOICE SETTING COMPUTER while the SET button is held down. • To select your favorite voice from the 32 factory-preset voices, press the RECORD button and depress on of the number buttons of the VOICE SETTING COMPUTER within 5 seconds. Then press RHYTHM button(s). Finally, press the selected number buttons again.
Storage is not possible with the PROGRAM CHORD COMPUTER.	• Check that the PCC indicator is slowly flashing. Pressing the FINGERED button turns off the RECORD button, making storage operation impossible. • Do not release the hand (chord designation) before pressing the measure buttons (⊢⌒⊣ and/or ⊢⌒┼⊣).
The stored registration cannot be used when performance is started with the PLAY SEQUENCER button turned on.	To use the stored registration, turn on the FSC button and then press the 1 button of the FUNCTION SELECTOR.

Phenomenon	Remedy
The stored introduction is not reproduced during automatic performance.	• Set the beginning of a song, such as an introduction, before turning on the RECORD button. • To add an introduction after the RECORD indicator and PLAY SEQUENCER indicator flash, set it after turning on the FSC button. Then turn off the FSC button.
No storage is possible even when the RECORD indicator and PLAY SEQUENCER indicator are slowly flashing.	• No storage is possible when the FSC button is turned on. Turn it off before playing. • If any PLAY SEQUENCER indicator is lit, press the START/STOP button for automatic performance of the stored part. Another part can then be stored.
The quick rhythm tempo is delayed when the PLAY SEQUENCER is used.	This occurs when too many tones are played at one time. Slow down the tempo (to about ♩ =180) or reduce the number of tones played at a time.
Different tones and effects are stored in the FULLBAND SETTING COMPUTER (FSC).	If the VOICE SETTING COMPUTTER (VSC) function is selected, the stored contents in this button are stored into the FSC. When the tones and effects selected by the VSC are changed, store them in the VSC again before storage in the FSC.
The cabinet becomes heated to some degree.	The Technics PCM Orchestra has a built-in power source that heats the cabinet to some degree. This is not an indication of trouble.

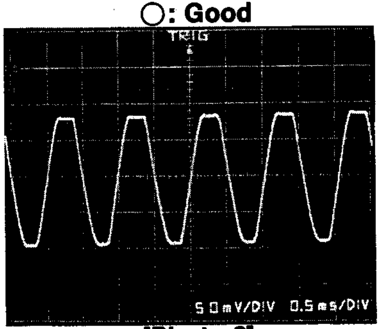
ADJUSTMENT PROCEDURE

ADJUSTMENT	MEASURING CONDITIONS	EQUIPMENT	ADJUSTMENT CIRCUIT BOARD	ADJ. POINT	CONNECT METER TO	METER READING
BBD bias	any position	Oscilloscope and Oscillator	EFFECTOR P.C.B.	VR1	Check point ❸	Photo-2

1. Connect the oscilloscope to check point ❸ of [EF] circuit board.
2. Input 1kHz sine wave to IC6-③ pin by oscillator through capacitor of less than 50V 1μF. Then, adjust the output level of oscillator until the sinwave on the oscilloscope is clipped.
3. Adjust VR1 so that the output waveforms on the oscilloscope are evenly clipped at top and bottom.

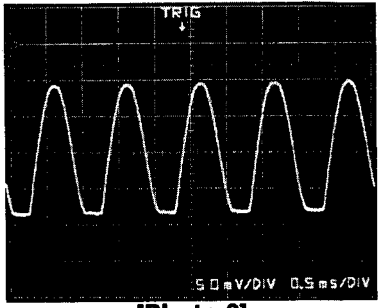
BBD bias adjustment

○: Good



[Photo-2]

× : Fault



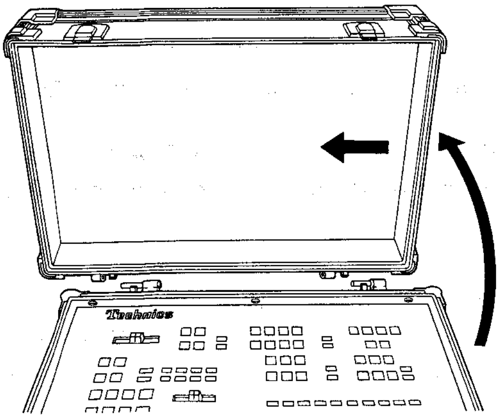
[Photo-3]

DISASSEMBLY PROCEDURE

1. Hingeted Cover

① Unlock the two lactches and open the Hingeted cover.

② Then the Hingeted cover can be removed leftwards.

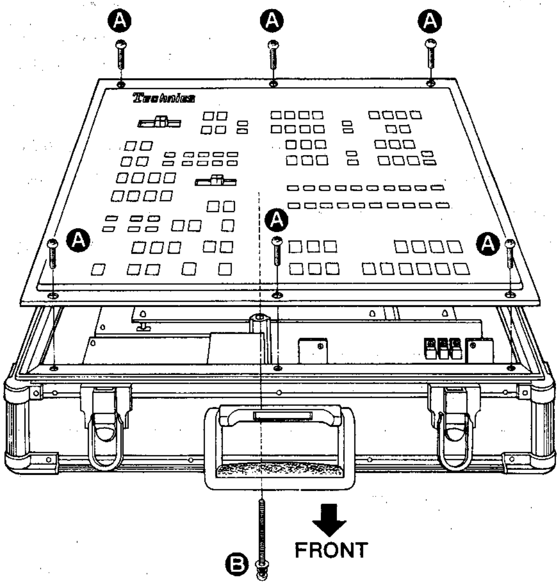


[Fig. 1]

2. Control Panel

① Remove the 6 screws Ⓐ on the control panel.

② Remove the 1 screws Ⓑ which fasten the control panel.



[Fig. 2]

3. Printed Circuit Board (CPC, CPSL, MAIN, JACK, AS)

CPC Control Panel I P.C.B.

① Remove the 9 screws Ⓒ which fasten the control panel I.

CPSL Control Panel II P.C.B.

① Pull out the transpose and tempo control knobs.

② Remove the 16 screws Ⓓ which fasten the control panel II.

NOTES:

① When dismounting the control panel P.C.B., set the button side down as shown in Fig. 3.

② If the button side is set upward, the buttons will fall down.

MAIN MAIN P.C.B.

① Remove the 5 screws Ⓔ on the rear panel.

② Release the 4 claws Ⓕ which fasten the main P.C.B.

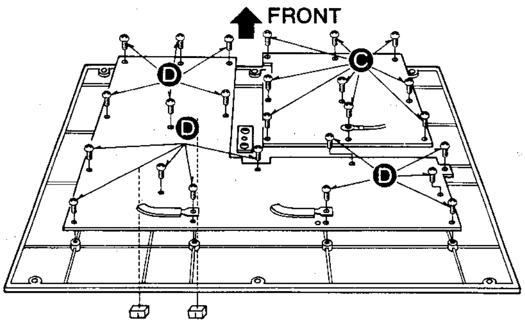
JACK JACK P.C.B.

① Remove the 2 screws Ⓖ which fasten the jack P.C.B.

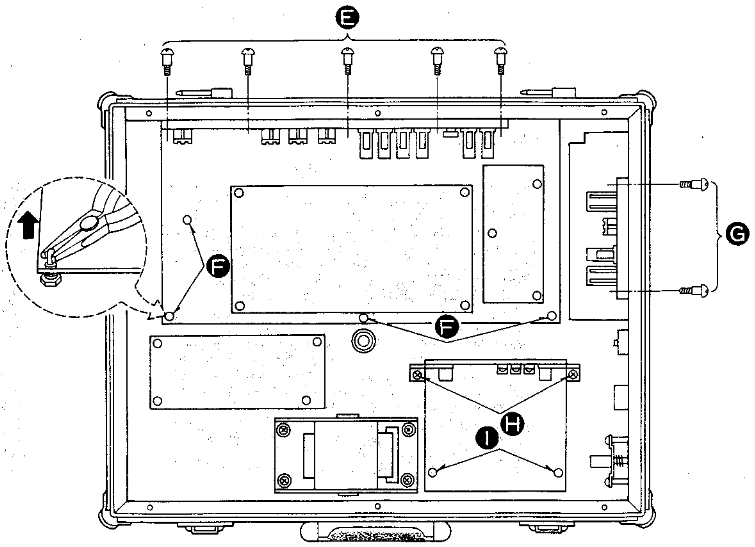
AS Amp & Power Supply P.C.B.

① Remove the 2 screws Ⓗ which fasten the Amp unit.

② Release the 2 claws Ⓘ which fasten the Amp & power supply P.C.B.

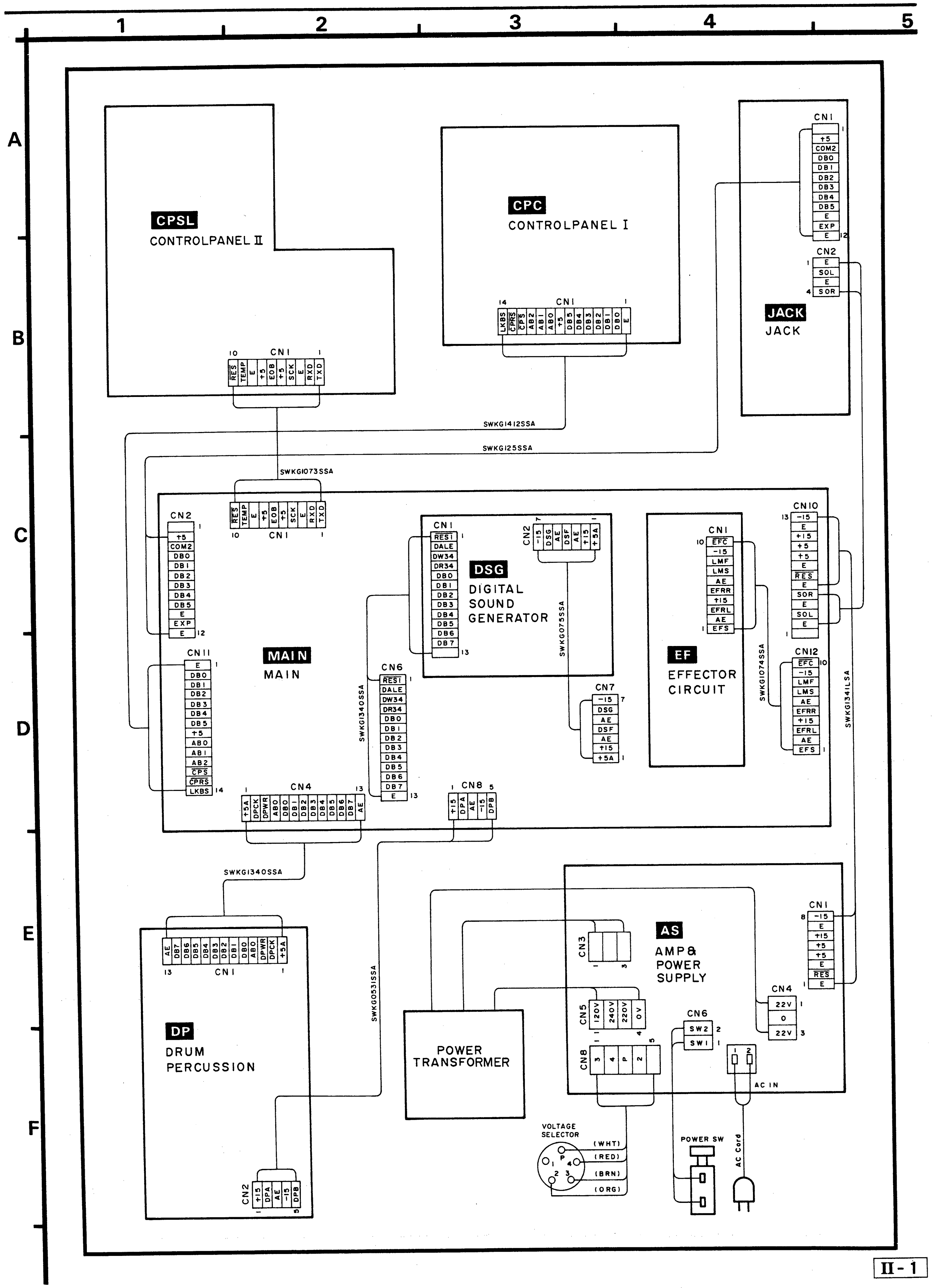


[Fig. 3]

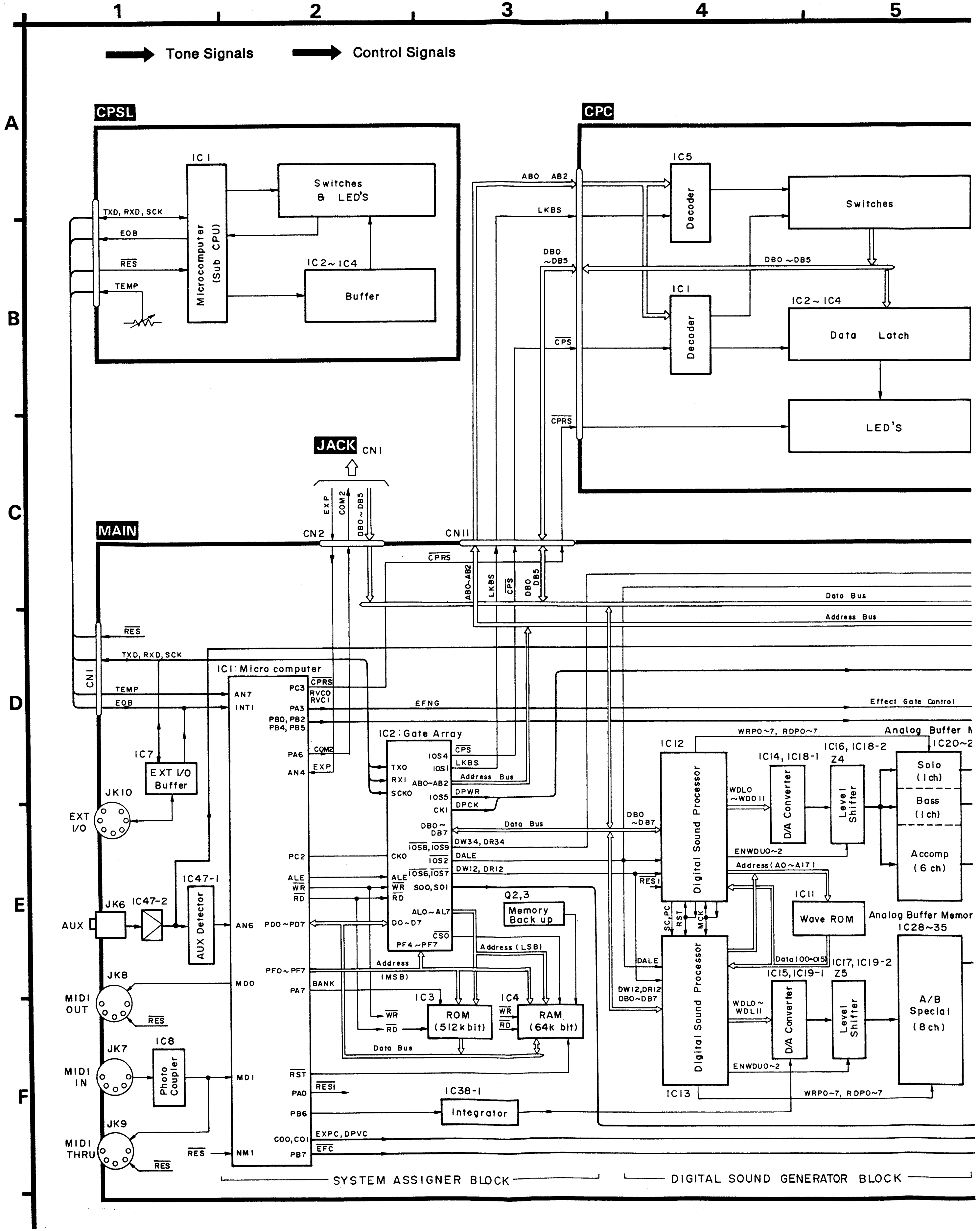


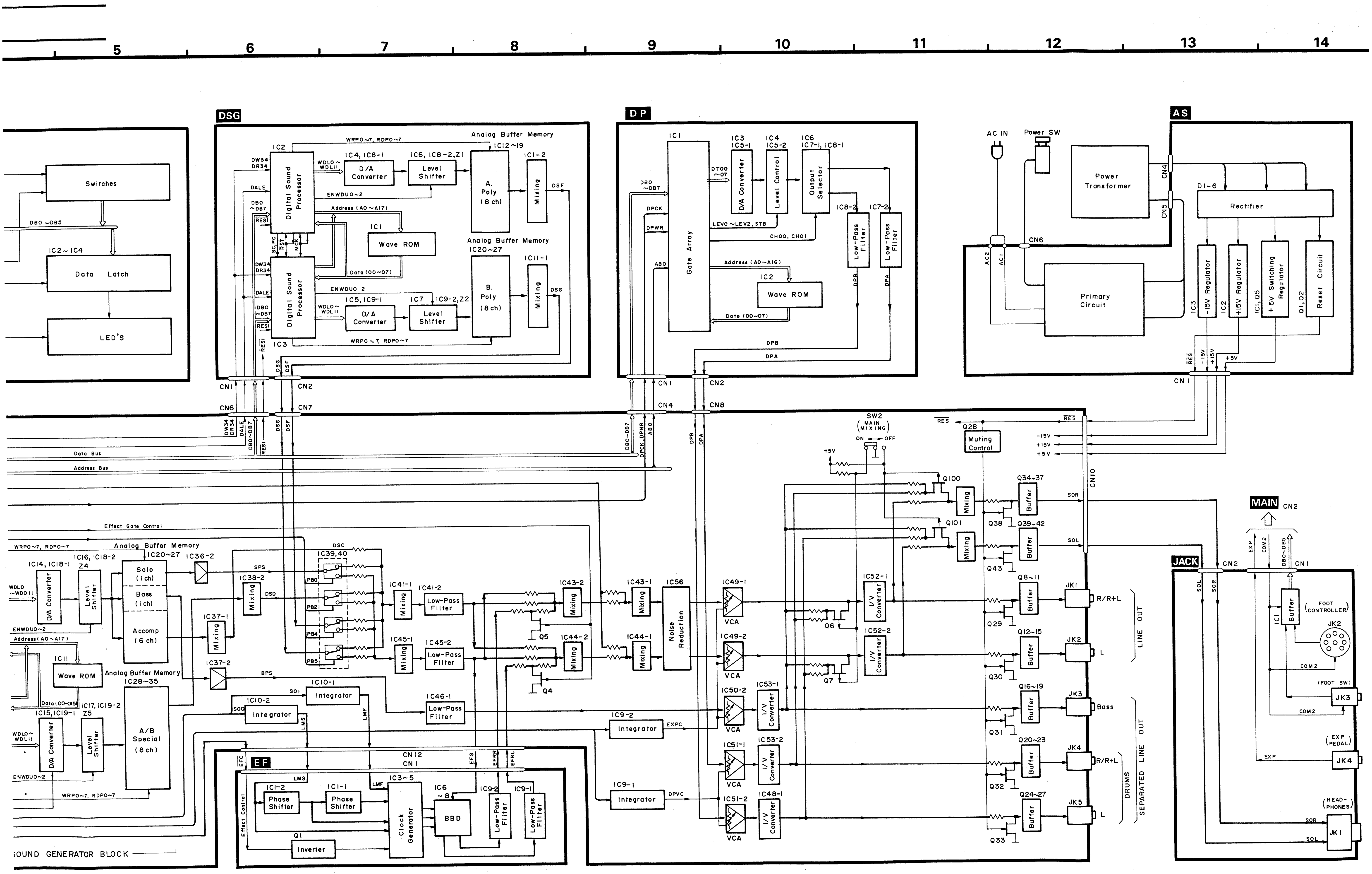
[Fig. 4].

WIRING CONECTION DIAGRAM


1
2
3
4
5
A
B
C
D
E
F
CPSL
CONTROLPANEL Ⅱ
CN1
RES TEMP E +5 EOB +5 SCK E RXD TXD
CPC
CONTROLPANEL Ⅰ
CN1
LKBS CPRS CPS AB2 AB1 AB0 +5 DB5 DB4 DB3 DB2 DB1 DB0 E
JACK
JACK
CN1
+5 COM2 DB0 DB1 DB2 DB3 DB4 DB5 E EXP E
CN2
E SOL E SOR
SWKG1412SSA
SWKG125SSA
SWKG1073SSA
MAIN
MAIN
CN2
CN11
E DB0 DB1 DB2 DB3 DB4 DB5 +5 AB0 AB1 AB2 CPS CPRS LKBS
CN4
+5A DPCK DPWR AB0 DB1 DB2 DB3 DB4 DB5 DB6 DB7 AE
CN8
+15 DPA AE -15 DPB
CN6
RES1 DALE DW34 DR34 DB0 DB1 DB2 DB3 DB4 DB5 DB6 DB7 E
SWKG1340SSA
DSG
DIGITAL SOUND GENERATOR
CN1
RES1 DALE DW34 DR34 DB0 DB1 DB2 DB3 DB4 DB5 DB6 DB7
CN2
-15 DSG AE DSF AE +15 +5A
SWKG075SSA
CN7
-15 DSG AE DSF AE +15 +5A
EF
EFFECTOR CIRCUIT
CN1
EFC -15 LMF LMS AE EFRR +15 EFRL AE EFS
SWKG1074SSA
CN10
-15 E +15 +5 E RES E SOR E SOL E
CN12
EFC -15 LMF LMS AE EFRR +15 EFRL AE EFS
SWKG1341LSA
SWKG1340SSA
DP
DRUM PERCUSSION
CN1
AE DB7 DB6 DB5 DB4 DB3 DB2 DB1 DB0 AB0 DPWR DPCK +5A
CN2
+15 DPA AE -15 DPB
SWKG0531SSA
POWER TRANSFORMER
AS
AMP& POWER SUPPLY
CN3
CN5
120V 240V 220V 0V
CN8
CN1
-15 E +15 +5 +5 E RES E
CN4
22V 0 22V
CN6
SW2 SW1
AC IN
VOLTAGE SELECTOR
(WHT) (RED) (BRN) (ORG)
POWER SW
AC Cord

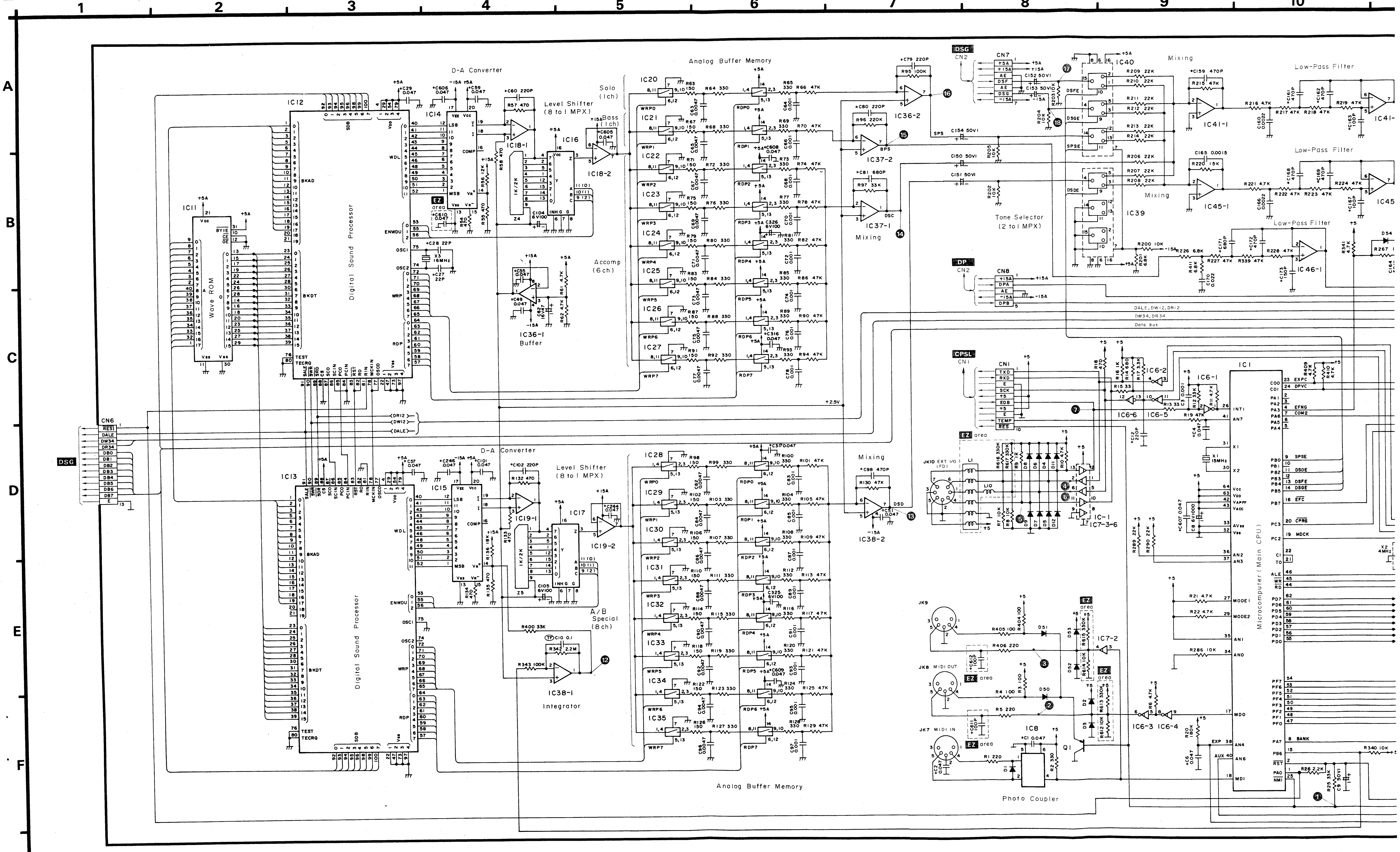
BLOCK DIAGRAM

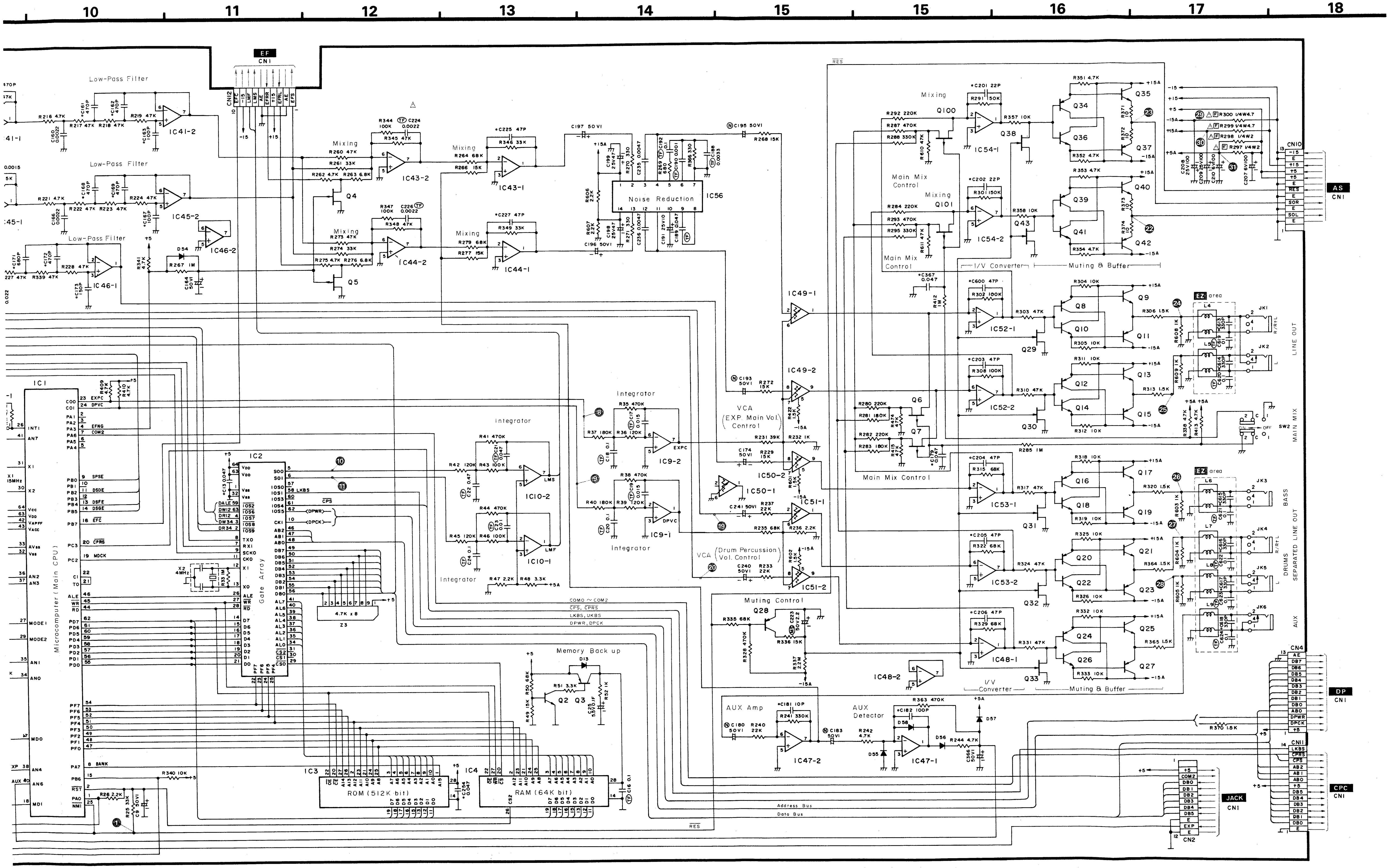

1
2
3
4
5
A
B
C
D
E
F
Tone Signals
Control Signals
CPSL
IC1
Microcomputer (Sub CPU)
Switches & LED'S
IC2~IC4
Buffer
TXD, RXD, SCK
EOB
RES
TEMP
CPC
AB0 AB2
LKBS
DB0~DB5
CPS
CPRS
IC5
Decoder
IC1
Decoder
Switches
IC2~IC4
Data Latch
LED'S
JACK CN1
EXP COM2 DB0~DB5
CN2
CN11
MAIN
AB0~AB2 LKBS CPS DB0 DB5
Data Bus
Address Bus
RES
TXD, RXD, SCK
TEMP
EOB
CN1
IC1: Micro computer
AN7 INT1 PC3 CPRS RVCO RVC1 PA3 PB0, PB2 PB4, PB5 PA6 COM2 EXP AN4 PC2 ALE WR RD AN6 PD0~PD7 PF0~PF7 PA7 BANK MD0 MDI RST PA0 RES1 PB6 C00, C01 EXPC, DPVC PB7 EFC NMI RES
EFNG
Effect Gate Control
IC7
EXT I/O Buffer
JK10
EXT I/O
IC47-1
AUX Detector
JK6
IC47-2
AUX
JK8
MIDI OUT
RES
IC8
Photo Coupler
JK7
MIDI IN
JK9
MIDI THRU
RES
IC2: Gate Array
TXO RXI SCKO IOS4 IOS1 CPS LKBS AB0~AB2 Address Bus IOS5 DPWR DPCK CK1 DB0~DB7 Data Bus IOS8, IOS9 DW34, DR34 CKO IOS2 DALE IOS6, IOS7 DW12, DR12 ALE WR S00, S01 RD ALO~AL7 DO~D7 CSO PF4~PF7
Q2,3
Memory Back up
Address (LSB)
Address (MSB)
IC3
ROM (512kbit)
IC4
RAM (64k bit)
WR RD
Data Bus
IC38-1
Integrator
IC12
Digital Sound Processor
WRP0~7, RDP0~7
DB0~DB7
RES1
SC, PC
RST
MCK
DALE
DW12, DR12
DB0~DB7
IC13
Digital Sound Processor
IC14, IC18-1
WDL0~WD011
D/A Converter
ENWDU0~2
Address (A0~A17)
IC16, IC18-2
Z4
Level Shifter
IC20~2
Solo (1ch)
Bass (1ch)
Accomp (6ch)
Analog Buffer M
IC11
Wave ROM
Data (D0~D15)
IC15, IC19-1
WDL0~WDL11
D/A Converter
ENWDU0~2
IC17, IC19-2
Z5
Level Shifter
Analog Buffer Memor
IC28~35
A/B Special (8ch)
WRP0~7, RDP0~7
SYSTEM ASSIGNER BLOCK
DIGITAL SOUND GENERATOR BLOCK


5
6
7
8
9
10
11
12
13
14
DSG
Switches
DBO ~DB5
IC2 ~ IC4
Data Latch
LED'S
IC2
Digital Sound Processor
IC3
Digital Sound Processor
DW34 DR34
DALE
DBO ~DB7
RESI
SC,PC
RST
MCK
WRPO ~7, RDPO ~7
WDLO ~ WDL11
IC4, IC8-1
D/A Converter
IC6, IC8-2, Z1
Level Shifter
Analog Buffer Memory IC12 ~19
A. Poly (8 ch)
IC11-2
Mixing
DSF
ENWDUO ~2
Address (A0 ~ A17)
IC1
Wave ROM
Data (00 ~ 07)
Analog Buffer Memory IC20 ~ 27
IC11-1
ENWDUO 2
IC5, IC9-1
IC7
IC9-2, Z2
B. Poly (8 ch)
DSG
CN1
CN2
CN6
CN7
DP
IC1
Gate Array
DBO ~DB7
DPCK
DPWR
ABO
IC3 IC5-1
D/A Converter
DTOO ~07
IC4 IC5-2
Level Control
IC6 IC7-1, IC8-1
Output Selector
LEVO ~LEV2, STB
CHOO, CHOI
Address (A0 ~ A16)
IC2
Wave ROM
Data (00 ~ 07)
IC8-2
Low-Pass Filter
IC7-2
Low-Pass Filter
DPB
DPA
CN4
CN8
AS
AC IN
Power SW
Power Transformer
CN4
CN5
CN6
D1 ~ 6
Rectifier
AC2
AC1
Primary Circuit
IC3
-15V Regulator
IC2
+15V Regulator
IC1, Q5
+5V Switching Regulator
Q1, Q2
Reset Circuit
RES
-15V
+15V
+5V
CN1
Data Bus
Address Bus
Effect Gate Control
SW2 (MAIN MIXING)
ON
OFF
+5V
Q28
Muting Control
Q100
Q101
Mixing
Q34 ~ 37
Buffer
Q38
Q39 ~ 42
Q43
SOR
SOL
CN10
WRPO ~7, RDPO ~7
Analog Buffer Memory IC20 ~ 27
IC14, IC18-1
IC16, IC18-2 Z4
IC36-2
D/A Converter
Level Shifter
Solo (1 ch)
Bass (1 ch)
Accomp (6 ch)
SPS
DSC
IC39, 40
PB0
PB2
PB4
PB5
IC38-2
DSD
IC37-1
IC37-2
BPS
ENWDUO ~2
Address (A0 ~ A17)
IC11
Wave ROM
Data (00 ~ 015)
Analog Buffer Memory IC28 ~ 35
A/B Special (8 ch)
IC15, IC19-1
IC17, IC19-2 Z5
IC41-1
IC41-2
Low-Pass Filter
IC45-1
IC45-2
IC43-2
IC44-2
Q5
Q4
IC43-1
IC44-1
IC56
Noise Reduction
IC10-1
Integrator
SOI
IC10-2
SOO
LMS
LMF
IC46-1
IC9-2
EXPC
IC9-1
DPVC
IC49-1
IC49-2
IC50-2
IC51-1
IC51-2
VCA
Q6
Q7
IC52-1
IC52-2
I/V Converter
IC53-1
IC53-2
IC48-1
Q8 ~ 11
Q29
Q12 ~ 15
Q30
Q16 ~ 19
Q31
Q20 ~ 23
Q32
Q24 ~ 27
Q33
JK1
R/R+L
JK2
L
LINE OUT
JK3
Bass
JK4
R/R+L
JK5
L
DRUMS SEPARATED LINE OUT
EF
CN12
CN1
EFC
EFS
EFRR
EFRL
Effect Control
IC1-2
Phase Shifter
IC1-1
IC3 ~ 5
Clock Generator
IC6 ~ 8
BBD
IC9-2
IC9-1
Q1
Inverter
SOUND GENERATOR BLOCK
MAIN
CN2
JACK
EXP
COM2
DBO ~ DB5
IC1
Buffer
FOOT CONTROLLER
JK2
COM2
(FOOT SW)
JK3
EXP PEDAL
JK4
HEADPHONES
JK1

MAIN

MAIN CIRCUIT DIAGRAM


1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
DSG
CN6
IC11
Wave ROM
IC12
Digital Sound Processor
IC13
Digital Sound Processor
D-A Converter
IC14
IC15
Level Shifter (8 to 1 MPX)
IC16
IC17
IC18-1
IC18-2
IC19-1
IC19-2
IC36-1 Buffer
IC38-1 Integrator
A/B Special (8ch)
Solo (1ch)
Bass (1ch)
Accomp (6ch)
Analog Buffer Memory
IC20
IC21
IC22
IC23
IC24
IC25
IC26
IC27
IC28
IC29
IC30
IC31
IC32
IC33
IC34
IC35
Mixing
IC36-2
IC37-1
IC37-2
IC38-2
CN7
CN8
DP
IC40
IC39
Tone Selector (2 to 1 MPX)
Mixing
IC41-1
IC45-1
IC46-1
Low-Pass Filter
CPSL
CN1
IC1
Microcomputer (Main CPU)
IC6-1
IC6-2
IC6-3
IC6-4
IC6-5
IC6-6
IC1-1
IC7-3-6
IC7-2
JK10 EXT I/O (FD)
JK9
JK8 MIDI OUT
JK7 MIDI IN
IC8
Photo Coupler
Q1
EZ area
X1 15MHz
X2 4MHz
X3 16MHz


10
11
12
13
14
15
15
16
17
18
EF CN1
CN12
Low-Pass Filter
Low-Pass Filter
Low-Pass Filter
IC41-2
IC45-2
IC46-1
IC46-2
Mixing
Mixing
Mixing
Mixing
IC43-2
IC43-1
IC44-2
IC44-1
Q4
Q5
Noise Reduction
IC56
Mixing
Q100
IC54-1
Main Mix Control
Mixing
Q101
IC54-2
Main Mix Control
I/V Converter
Muting & Buffer
Q34
Q35
Q36
Q37
Q38
Q39
Q40
Q41
Q42
Q43
CN10
AS CN1
IC49-1
IC49-2
IC52-1
IC52-2
Q8
Q9
Q10
Q11
Q12
Q13
Q14
Q15
Q29
Q30
EZ area
LINE OUT
JK1
JK2
R/RtL
L
MAIN MIX
SW2
OFF
ON
IC1
Microcomputer (Main CPU)
IC2
Gate Array
Integrator
Integrator
Integrator
Integrator
IC10-2
IC10-1
IC9-2
IC9-1
EXPC
DPVC
LMS
LMF
VCA (EXP Main Vol. Control)
VCA (Drum Percussion Vol. Control)
IC50-2
IC50-1
IC51-1
IC51-2
Main Mix Control
Q6
Q7
IC53-1
IC53-2
IC48-1
Q16
Q17
Q18
Q19
Q20
Q21
Q22
Q23
Q24
Q25
Q26
Q27
Q31
Q32
Q33
BASS
DRUMS SEPARATED LINE OUT
AUX
JK3
JK4
JK5
JK6
Muting Control
Q28
IC48-2
Memory Back up
Q2
Q3
D13
AUX Amp
AUX Detector
IC47-2
IC47-1
D55
D56
D57
D58
I/V Converter
Muting & Buffer
X2 4MHz
X1 15MHz
4.7K x 8
Z3
IC3
ROM (512K bit)
IC4
RAM (64K bit)
Address Bus
Data Bus
RES
COM0 ~ COM2
CPS, CPRS
LKBS, UKBS
DPWR, DPCK
CN4
DP CN1
CN11
CPC CN1
JACK CN1
CN2

■ NOTES:

Wave form of these check points were measured by following conditions on SM-AC30 connected with MIDI keyboard.

Keyboard (A) .... **C4** **(72)**
※ Key No. MIDI NOTE NO (INITIAL MODE)

※
- Keyboard (A): Set the basic channel as A part.
- Keyboard (B): Set the basic channel as B part.
- Keyboard (Bass): Set the basic channel as Bass part.
- Keyboard (Solo): Set the basic channel as Solo part.

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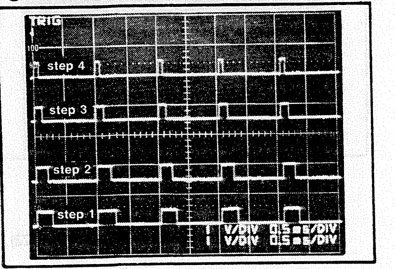
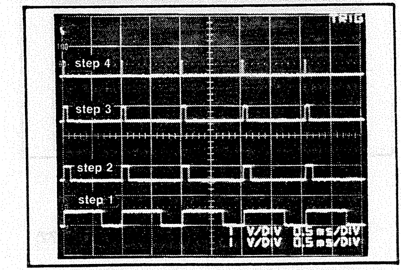
⑧ Main Vol., EXP Control



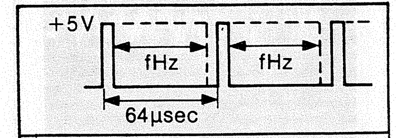
- EXP Pedal............................Max
- Main Volume........................Step 1~4
- Keyboard.............................Key ON

⑨ Rhythm Vol. Control



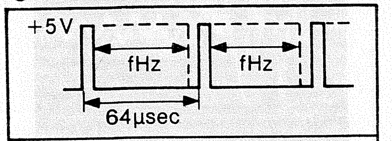
- EXP Pedal............................Max
- Main Volume........................Step 4
- Drums Volume....................Step 1~4
- Rhythm...............................Start

⑩



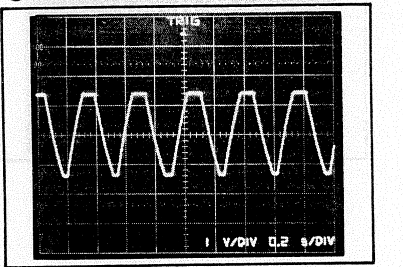
- Tremolo 6.5Hz
- Chorus 0.5Hz
- Celeste 0.5Hz

⑪



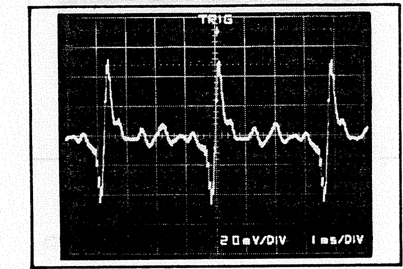
- Tremolo 20Hz
- Chorus 1Hz

⑫



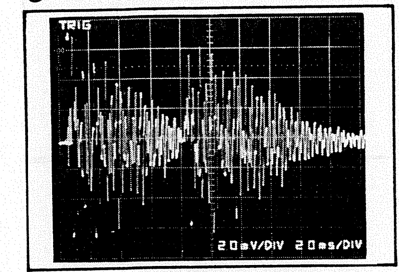
- A. Special...........................Vibraphone

⑬ SPECIAL



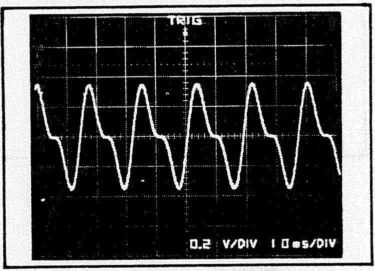
- A. Special...........................Trumpet
- Special Vol..........................Step 4
- Keyboard (A).......................C4 (72)

⑭ ACCOMP



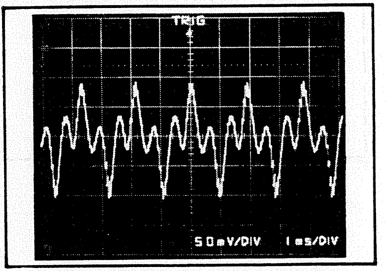
- Rhythm: Disco Ⅰ • Tempo: ♩=180
- Play Mode: Fingered
- Accomp Pattern: Ⅰ • Melodic: OFF
- Accomp Volume: Step 4
- Keyboard (B): C2 (48)

⑮ BASS



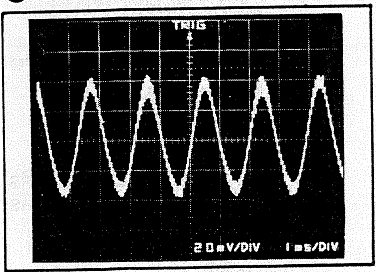
- Bass....................................Bass 16′
- Bass Volume.......................Step 4
- Keyboard (Bass)................A1 (45)

⑯ SOLO



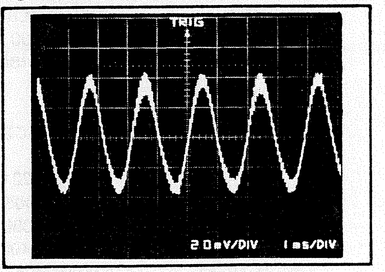
- Solo.....................................Flute
- Solo Volume.......................Step 4
- Keyboard (Solo).................C4 (72)

⑰ UPPER POLY



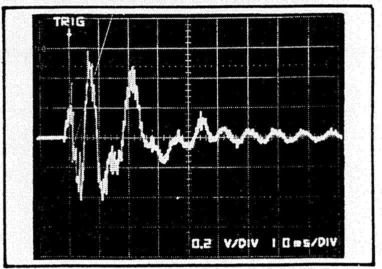
- A. Poly.................................Flute 8′
- A. Poly Volume...................Step 4
- Keyboard (A).......................C4 (72)

⑱ LOWER POLY



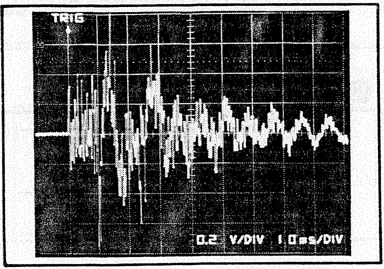
- B. Poly.................................Flute 8′
- B. Poly Volume...................Step 4
- Keyboard............................C4 (72)

⑲ Drum Percussion A



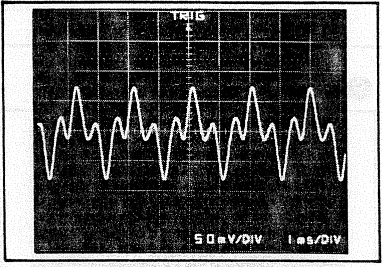
- Phythm ....Disco Ⅰ
- Tempo................................ ♩=300
- Drums Volume....................Step 4

⑳ Drum Percussion B



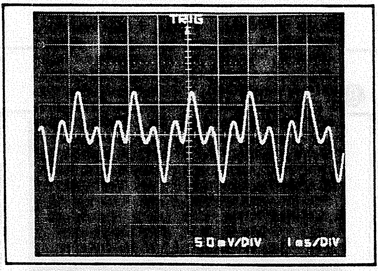
- Rhythm ....Disco I
- Tempo.............................. ♩=300
- Drums Volume ....Step 4

㉒



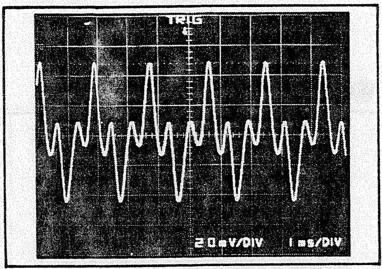
- Solo....................................Flute
- Solo Vol., Main Vol. ....Step 4
- EXP Pedal..........................Max
- Effect...OFF • Keyboard (Solo)...C4 (72)

㉓



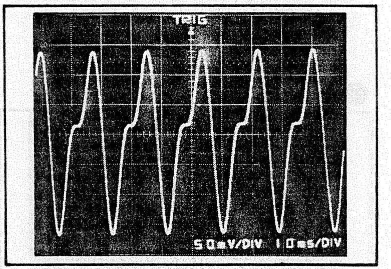
- Solo....................................Flute
- Solo Vol., Main Vol. ....Step 4
- EXP Pedal..........................Max
- Effect...OFF • Keyboard (Solo)...C4 (72)

㉔, ㉕



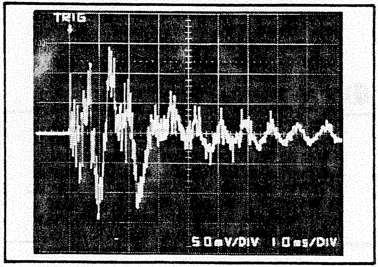
- Solo....................................Flute
- Solo Vol., Main Vol. ....Step 4
- EXP Pedal..........................Max
- Effect...OFF • Keyboard (Solo)...C4 (72)

㉖



- Bass ....Bass 16′
- Bass Vol., Main Vol. ....Step 4
- EXP Pedal..........................Max
- Keyboard (Bass) A1 (45)

㉗, ㉘



- Rhythm ....Disco I
- Tempo.............................. ♩=300
- Drums Vol., Main Vol. ....Step 4
- EXP Pedal..........................Max

㉙

−15V

㉚

+15V

㉛

+5V

NOTES:

- IC'S

IC1:	SVIG7810H
IC2:	SVIGM6050211
IC3:	SVIG05AC30A0
IC4:	SVIGD446415L
IC6:	SVIGM74LS05
IC7:	SVIGM74LS07
IC8:	SVIGPC900
IC9, 10, 36~38, 41, 43~48, 52~54,	SVIGM5218L
IC11:	SVIG2000C209
IC12, 13:	MN6635
IC14, 15:	SVIGBA9221
IC16, 17:	MN74HC4051
IC18, 19:	SVIGM5238L
IC20~35:	SVIGUPD4066B
IC39, 40:	SVIGTC4053BP
IC49~51:	SVIGM5241L
IC56:	SVIGLM1894N

- TRANSISTORS

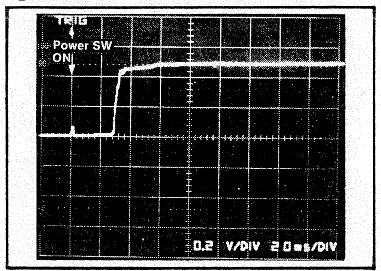
Q1, 3, 8, 11, 12, 15, 16, 19, 20, 23, 24, 27, 28, 34, 39:	2SA1015-GR
Q2, 9, 10, 13, 14, 17, 18, 21, 22, 25, 26, 36, 41:	2SC2320LFG
Q4~7, 100, 101:	2SJ40CD
Q29~33, 38, 43:	2SK381
Q35, 40:	2SC3940ARS
Q37, 42:	2SA1534ARS

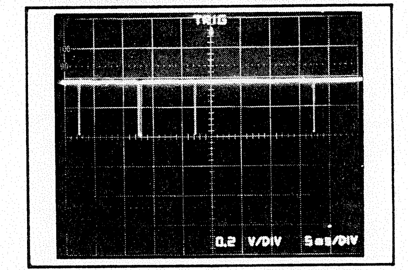
- DIODES

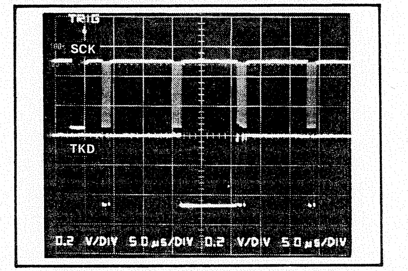
D1~9, 11~13, 50~58:	MA165TA5

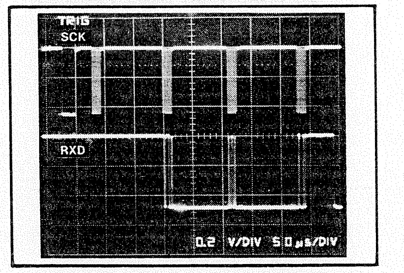
MAIN

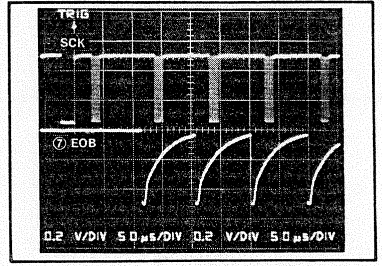
MAIN CIRCUIT BOARD


① RES


② MIDI OUT

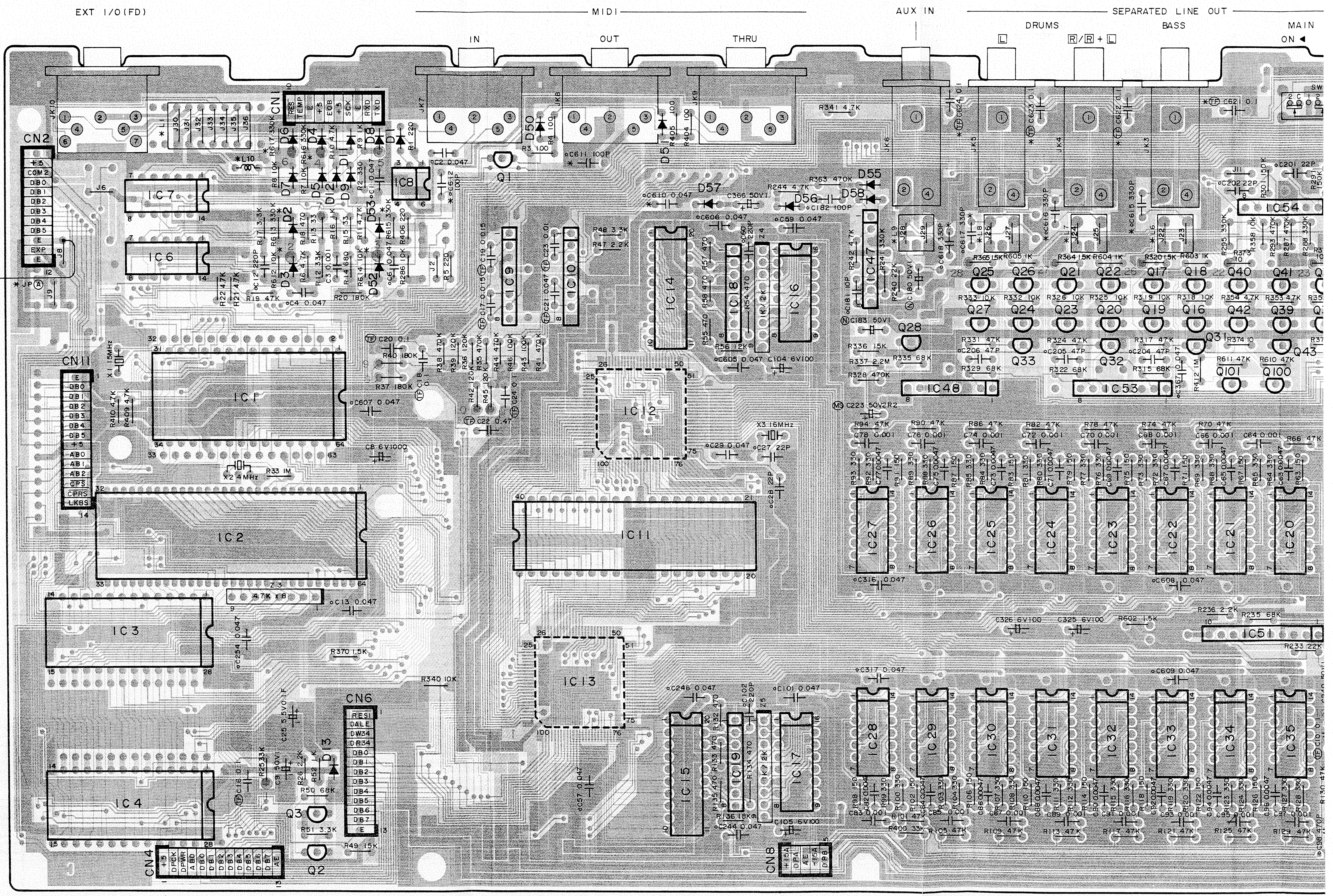

SCK, TKD


SCK, RXD


SCK, ⑦ EOB

∗P.C.B. Comparison chart by area.

Area	P.C.B. No.	L1	L4	L5	L6	L7	L8	L9	R612~617	C610~624	JP Ⓐ
EZ	SXPG136541	○	○	○	○	○	○	○	○	○	○
Others	SXPG136521	× (J30~J35)	× (J18, J19)	× (J20, J21)	× (J22, J23)	× (J24, J25)	× (J26, J27)	× (J28, J29)	×	×	×

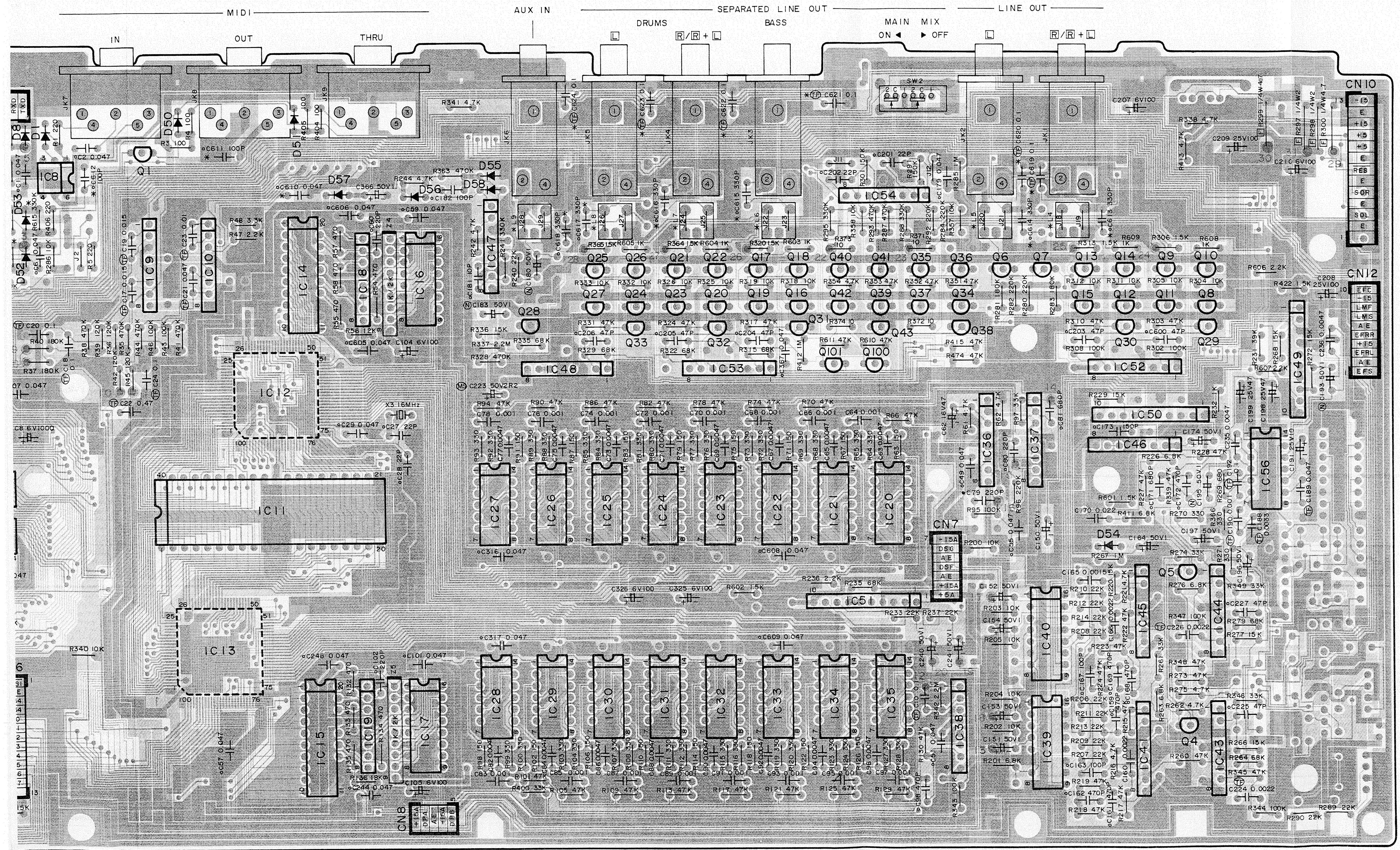

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
EXT I/O(FD)
MIDI
IN
OUT
THRU
AUX IN
SEPARATED LINE OUT
DRUMS
BASS
MAIN
ON ◄
CN1
CN2
CN4
CN6
CN8
CN11
IC1
IC2
IC3
IC4
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
IC20
IC21
IC22
IC23
IC24
IC25
IC26
IC27
IC28
IC29
IC30
IC31
IC32
IC33
IC34
IC35
IC47
IC48
IC51
IC53
IC54
JK3
JK4
JK5
JK6
JK7
JK8
JK9
JK10
Q1
Q2
Q3
Q28
X1 15MHz
X2 4MHz
X3 16MHz
∗JP Ⓐ

5 6 7 8 9 10 11 12 13 14

Circuit view on top of P.C.B

L6	L7	L8	L9	R612~617	C610~624	JP Ⓐ
○	○	○	○	○	○	○
× (J22, J23)	× (J24, J25)	× (J26, J27)	× (J28, J29)	×	×	×

Products for [EZ] area	other areas
SXPG136541	**SXPG136521**


MIDI
IN
OUT
THRU
AUX IN
SEPARATED LINE OUT
DRUMS
L
R/R+L
BASS
MAIN MIX
ON ◄ ► OFF
LINE OUT
L
R/R+L
SW2
CN10
CN12
CN7
CN8
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
IC20
IC21
IC22
IC23
IC24
IC25
IC26
IC27
IC28
IC29
IC30
IC31
IC32
IC33
IC34
IC35
IC36
IC37
IC38
IC39
IC40
IC41
IC43
IC44
IC45
IC46
IC47
IC48
IC49
IC50
IC51
IC52
IC53
IC54
IC56
X3 16MHz

NOTES:

- IC'S

IC1:	SVIG7810H
IC2:	SVIGM6050211
IC3:	SVIG05AC30A0
IC4:	SVIGD446415L
IC6:	SVIGM74LS05
IC7:	SVIGM74LS07
IC8:	SVIGPC900
IC9, 10, 36~38, 41, 43~48, 52~54,	SVIGM5218L
IC11:	SVIG2000C209
IC12, 13:	MN6635
IC14, 15:	SVIGBA9221
IC16, 17:	MN74HC4051
IC18, 19:	SVIGM5238L
IC20~35:	SVIGUPD4066B
IC39, 40:	SVIGTC4053BP
IC49~51:	SVIGM5241L
IC56:	SVIGLM1894N

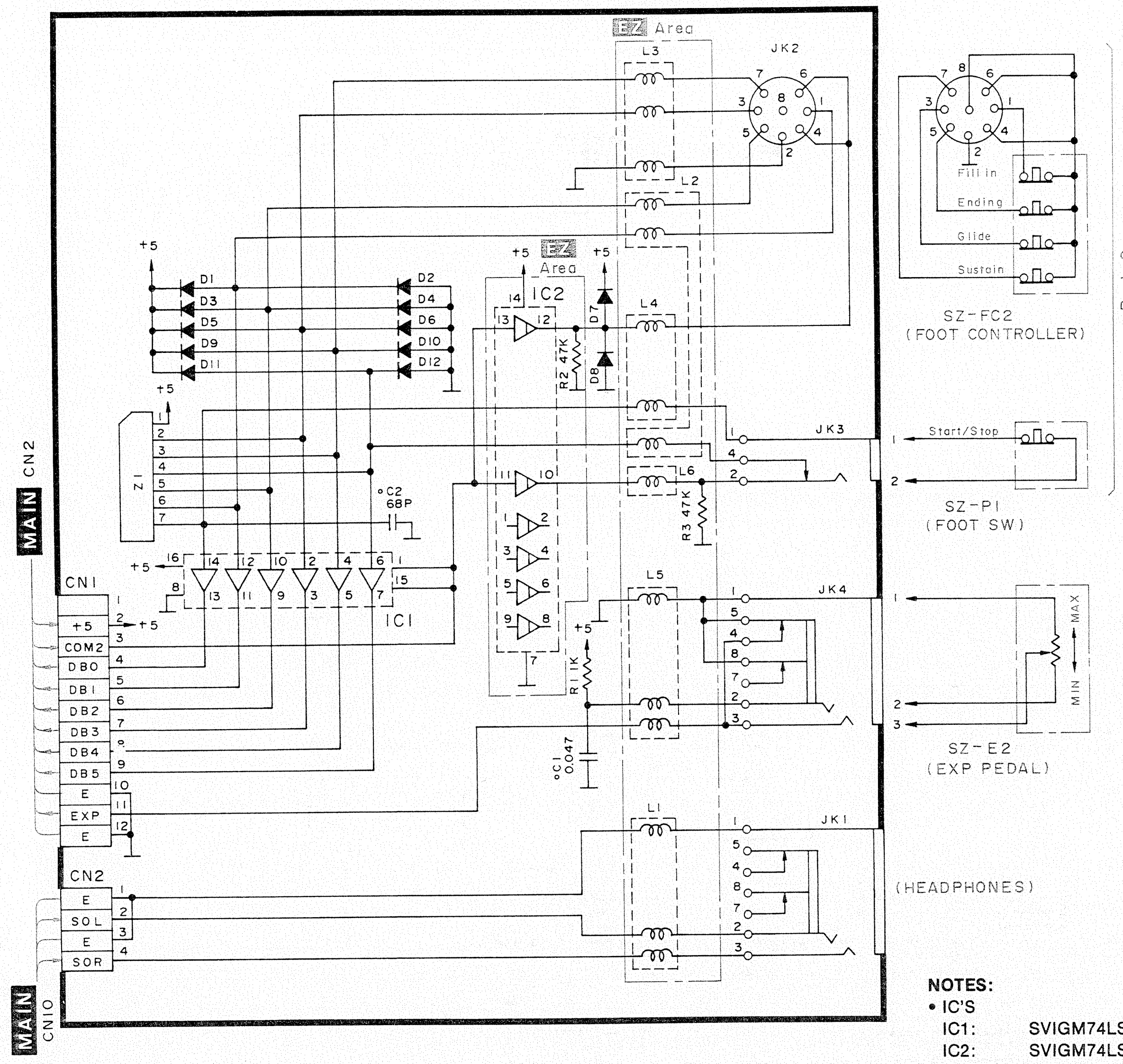
- TRANSISTORS

Q1, 3, 8, 11, 12, 15, 16, 19, 20, 23, 24, 27, 28, 34, 39:	2SA1015-GR
Q2, 9, 10, 13, 14, 17, 18, 21, 22, 25, 26, 36, 41:	2SC2320LFG
Q4~7, 100, 101:	2SJ40CD
Q29~33, 38, 43:	2SK381
Q35, 40:	2SC3940ARS
Q37, 42:	2SA1534ARS

- DIODES

D1~9, 11~13, 50~58:	MA165TA5

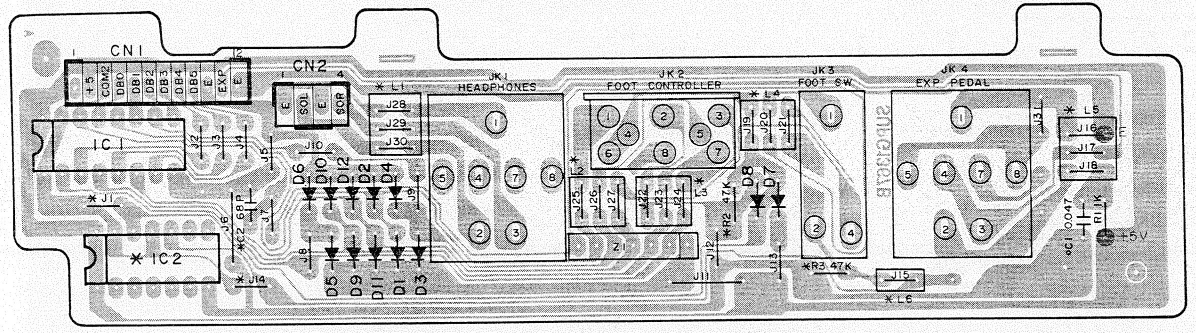
JACK JACK CIRCUIT DIAGRAM


EZ Area
JK2
JK3
JK4
JK1
IC1
IC2
MAIN CN2
MAIN CN10
CN1
CN2
SZ-FC2
(FOOT CONTROLLER)
Fill in
Ending
Glide
Sustain
Push Open
Start/Stop
SZ-P1
(FOOT SW)
MAX
MIN
SZ-E2
(EXP PEDAL)
(HEADPHONES)
+5
COM2
DB0
DB1
DB2
DB3
DB4
DB5
E
EXP
SOL
SOR
C2 68P
R2 47K
R3 47K
R1 1K
C1 0.047

NOTES:
- IC'S
  - IC1: SVIGM74LS367
  - IC2: SVIGM74LS07
- DIODES
  - D1~D12: MA165TA5

JACK JACK CIRCUIT BOARD

■ Products for (EZ) area **SXPG136721B** ■ Others **SXPG136711B**

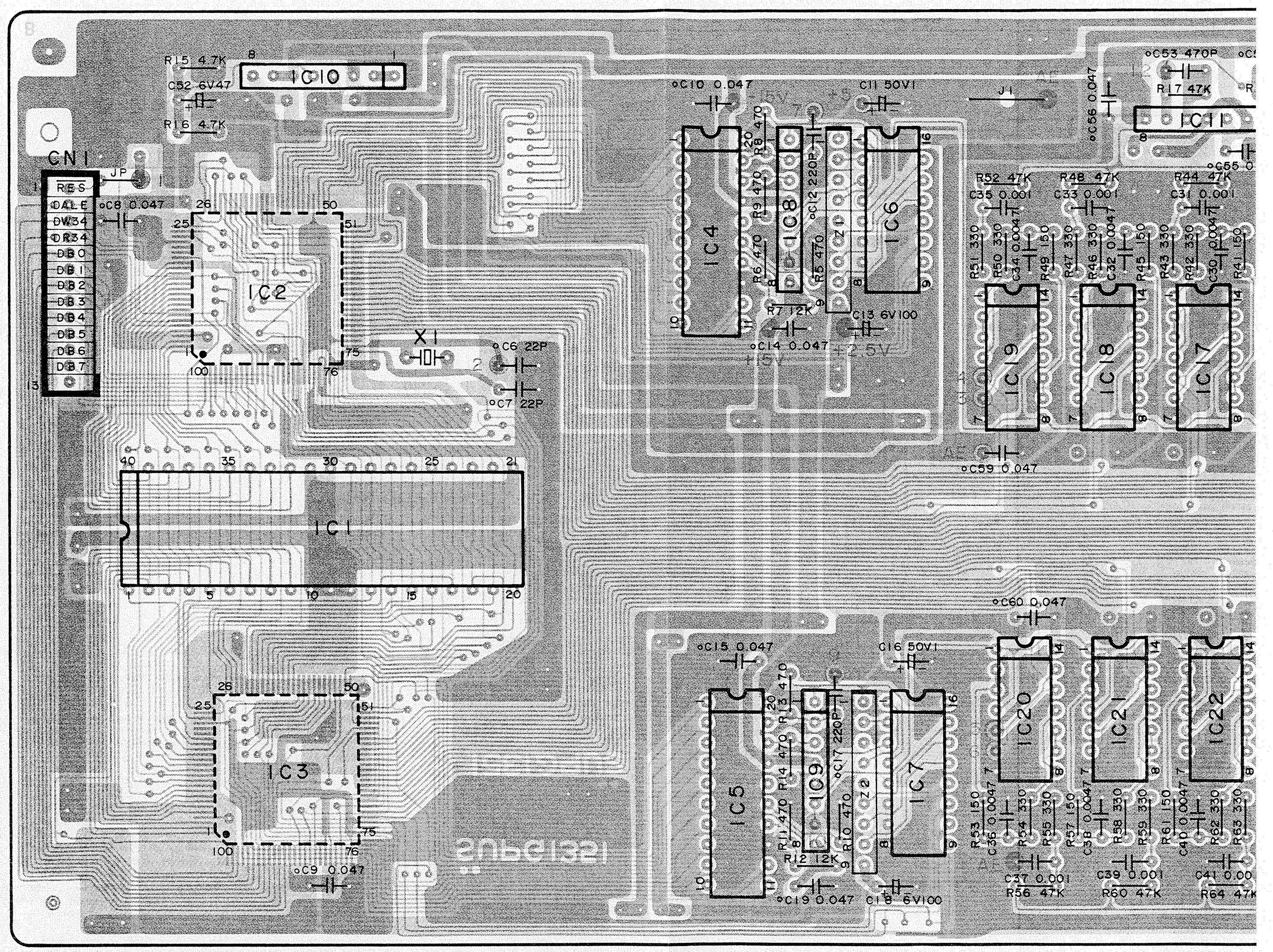

CN1
CN2
JK1 HEADPHONES
JK2 FOOT CONTROLLER
JK3 FOOT SW
JK4 EXP PEDAL
IC1
✱ IC2
Z1
✱ L1
✱ L6
✱R3 47K
+5V

＊P.C.B. Comparison chart by area.

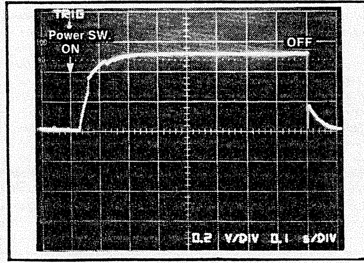
Area	P.C.B. No.	IC1	R2, R3	C2	L1~L6
EZ	SXPG136721B	○	○	○	○
Others	SXPG136711B	× (J1, J14)	×	×	× (J15~J30)

DSG DIGITAL SOUND GENERATOR CIRCUIT BOARD

Circuit view on top of P.C.B

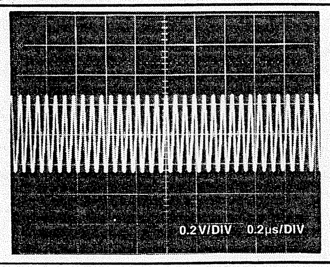

CN1
RES
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC17
IC18
IC19
IC20
IC21
IC22
X1
SUPG1321

❶ RES1

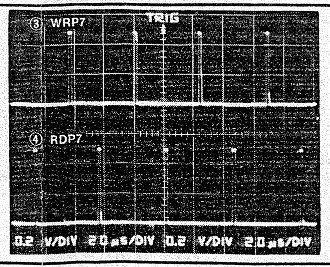


- Power SW. ....ON → OFF

❷ 16MHz

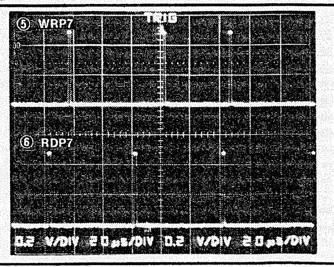


❸ WRP7, ❹ RDP7



- A. Poly ....Flute 8′
- Keyboard (A) C4 (72)

❺ WRP7, ❻ RDP7



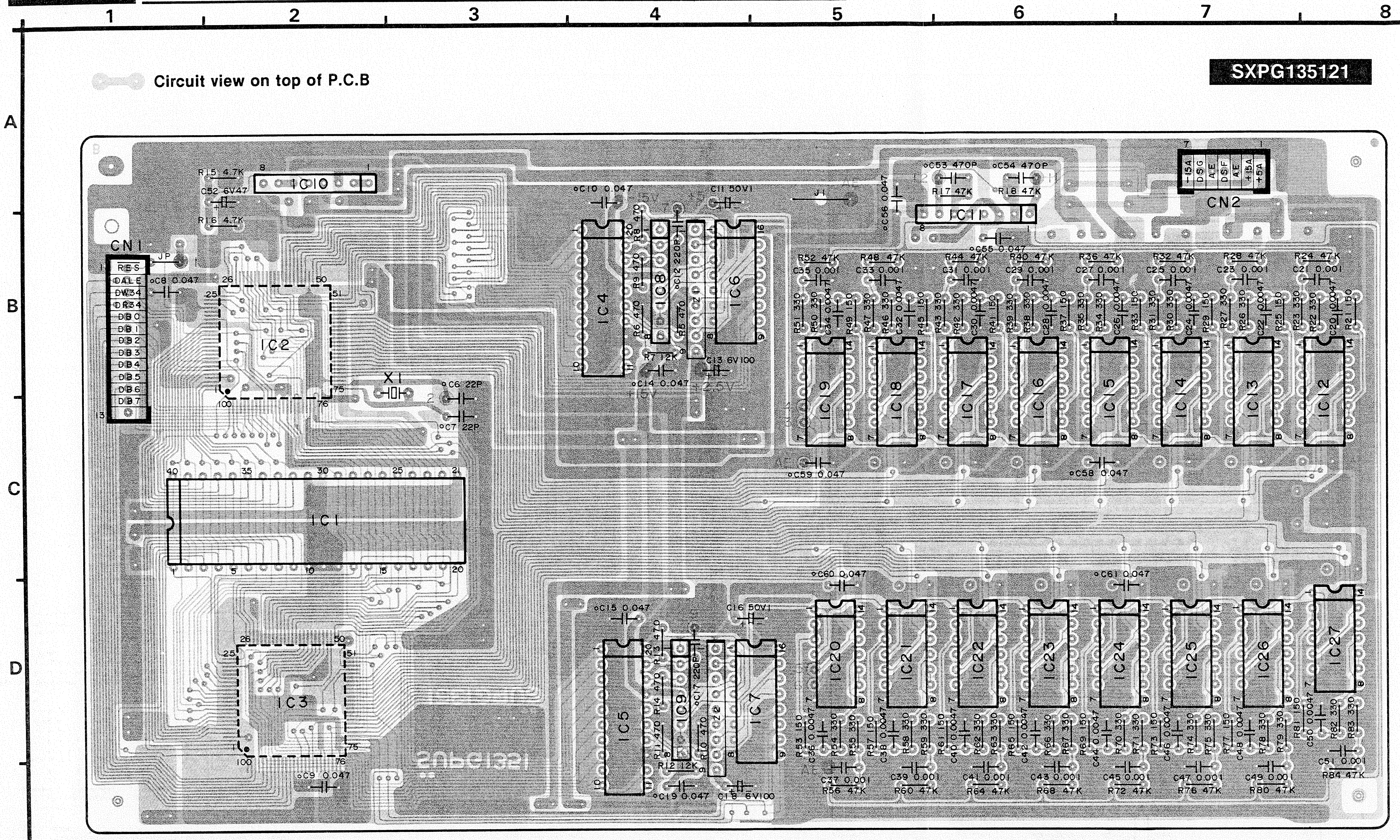
- B. Poly ....Flute 8′
- Keyboard (B) C4 (72)

❼

DSG DIGITAL SOUND GENERATOR CIRCUIT BOARD

Circuit view on top of P.C.B

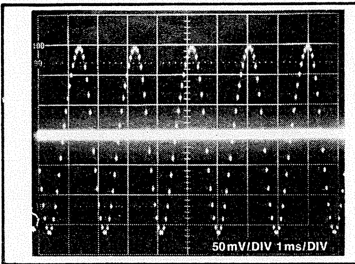
SXPG135121


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
CN1
RES
DALE
DW34
DR34
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
JP
CN2
-15A
DSG
AE
DSF
AE
+15A
+5A
IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
IC10
IC11
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
IC20
IC21
IC22
IC23
IC24
IC25
IC26
IC27
X1
J1
R15 4.7K
R16 4.7K
C52 6V47
C8 0.047
C10 0.047
C11 50V1
C53 470P
C54 470P
R17 47K
R18 47K
C55 0.047
C56 0.047
C6 22P
C7 22P
C13 6V100
C14 0.047
R7 12K
C59 0.047
C58 0.047
C60 0.047
C61 0.047
C15 0.047
C16 50V1
C9 0.047
C19 0.047
C18 6V100
R12 12K
R84 47K
SUPG1351

NOTES:
- IC'S

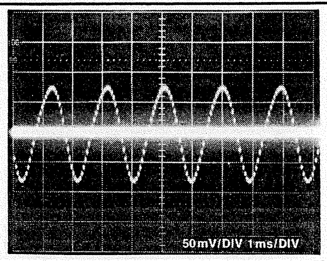
IC1: SVIGC320C266
IC2, 3: MN6635
IC4, 5: SVIGBA9221
IC6, 7: MN74HC4051
IC8, 9: SVIGM5238L
IC10, 11: SVIGM5218L
IC12～27: SVIGUPD4066B

❾



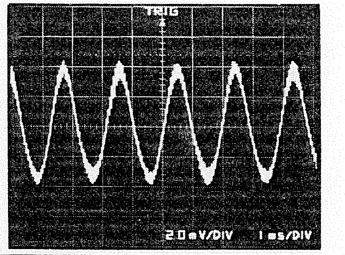
- B. Poly ....Flute 8′
- B. Poly Volume..................Step 4
- Keyboard (B) C4 (72)

❿



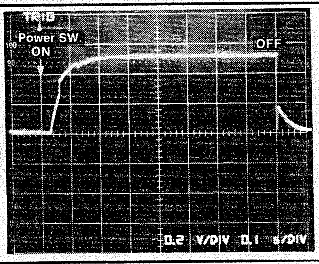
- B. Poly ....Flute 8′
- B. Poly Volume..................Step 4
- Keyboard (B) C4 (72)

⓫



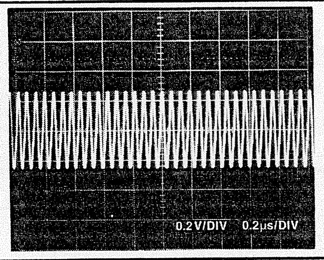
- B. Poly ....Flute 8′
- B. Poly Volume..................Step 4
- Keyboard (B) C4 (72)

❶ $\overline{\text{RES1}}$

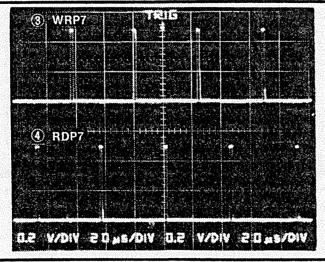


- Power SW.........................ON → OFF

❷ 16MHz

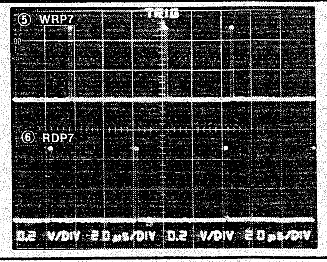


❸ WRP7, ❹ RDP7



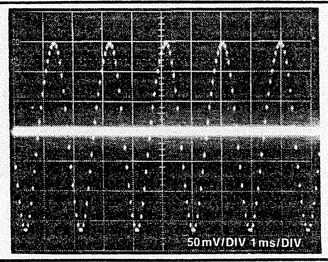
- A. Poly ....Flute 8′
- Keyboard (A) C4 (72)

❺ WRP7, ❻ RDP7



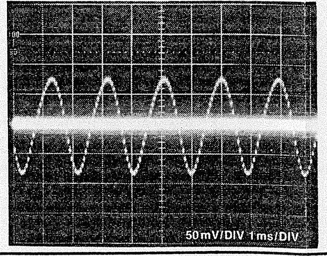
- B. Poly ....Flute 8′
- Keyboard (B) C4 (72)

❼



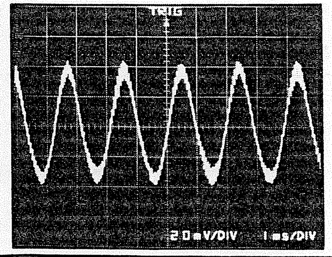
- A. Poly ....Flute 8′
- A. Poly Volume..................Step 4
- Keyboard (A) C4 (72)

❽



- A. Poly ....Flute 8′
- A. Poly Volume..................Step 4
- Keyboard (A) C4 (72)

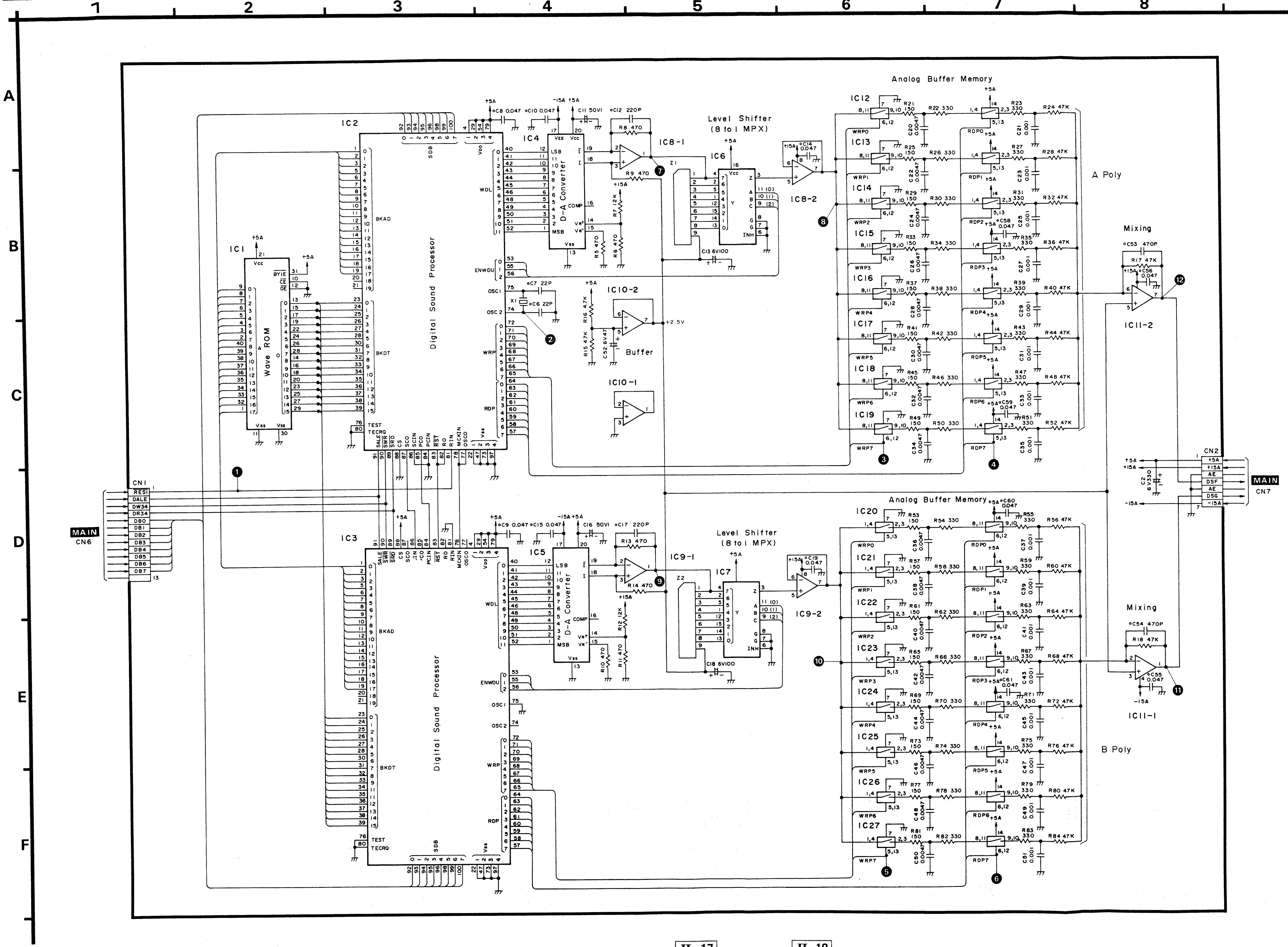
⓬



- A. Poly ....Flute 8′
- A. Poly Volume..................Step 4
- Keyboard (A) C4 (72)

DSG

DIGITAL SOUND GENERATOR CIRCUIT DIAGRAM

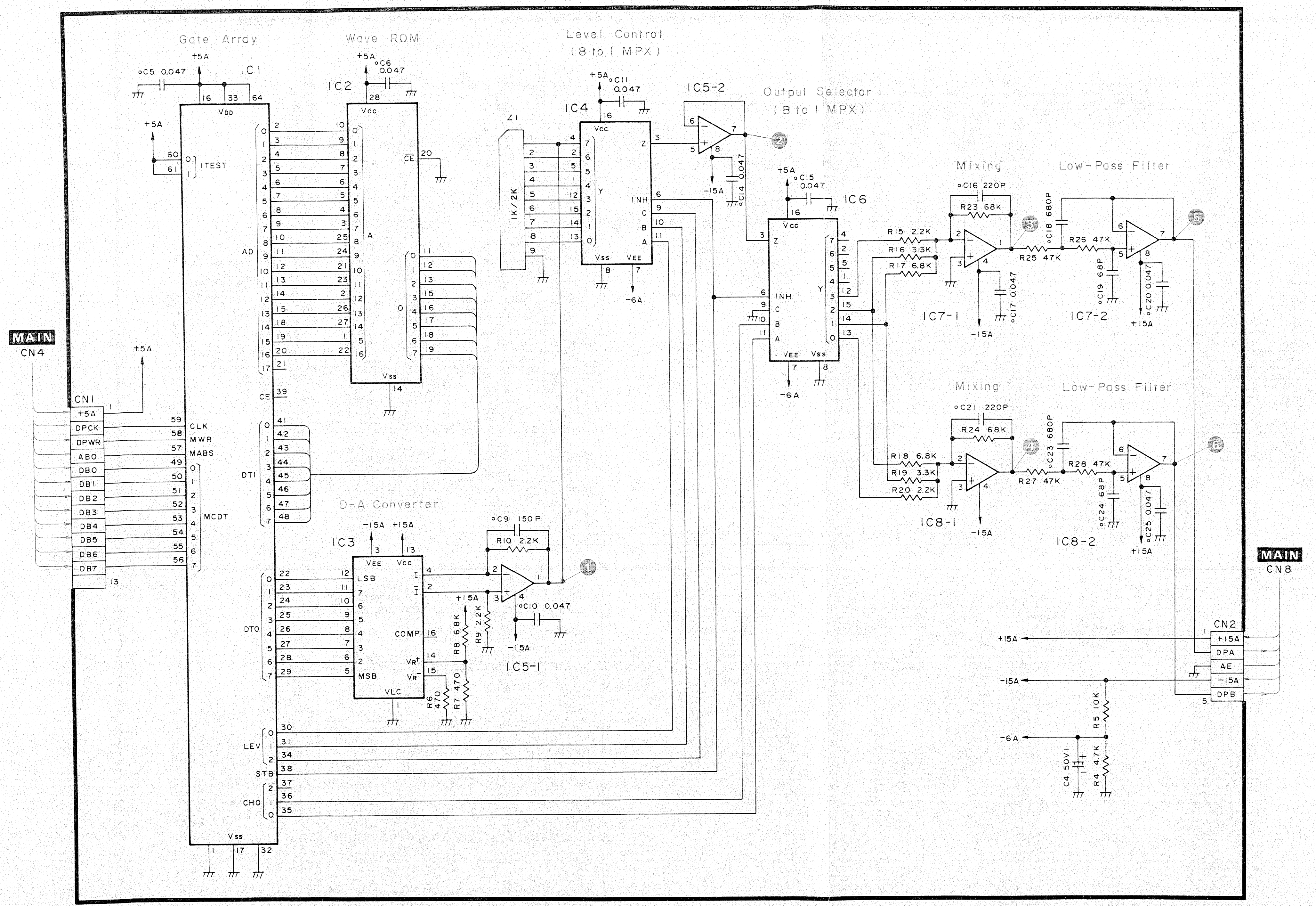

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
IC1
Wave ROM
IC2
IC3
Digital Sound Processor
BKAD
BKDT
SDB
WDL
ENWDU
OSC1
OSC2
WRP
RDP
TEST
TECRQ
IC4
IC5
D-A Converter
LSB
MSB
COMP
IC8-1
IC8-2
IC9-1
IC9-2
IC10-1
IC10-2
Buffer
+2.5V
Level Shifter
(8 to 1 MPX)
IC6
IC7
Z1
Z2
INH
Analog Buffer Memory
IC12
IC13
IC14
IC15
IC16
IC17
IC18
IC19
IC20
IC21
IC22
IC23
IC24
IC25
IC26
IC27
A Poly
B Poly
Mixing
IC11-1
IC11-2
CN1
RESI
DALE
DW34
DR34
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
MAIN
CN6
CN2
+5A
+15A
AE
DSF
AE
DSG
-15A
MAIN
CN7
+5A
+15A
-15A
X1
C7 22P
C6 22P
C8 0.047
C9 0.047
C10 0.047
C15 0.047
C11 50V1
C16 50V1
C12 220P
C17 220P
R8 470
R9 470
R13 470
R14 470
R7 12K
R12 12K
R5 470
R6 470
R10 470
R11 470
R15 4.7K
R16 4.7K
C52 6V47
C13 6V100
C18 6V100
C14 0.047
C19 0.047
C53 470P
C54 470P
R17 47K
R18 47K
C56 0.047
C55 0.047
C2 6V330
①
②
③
④
⑤
⑥
⑦
⑧
⑨
⑩
⑪
⑫

NOTES:

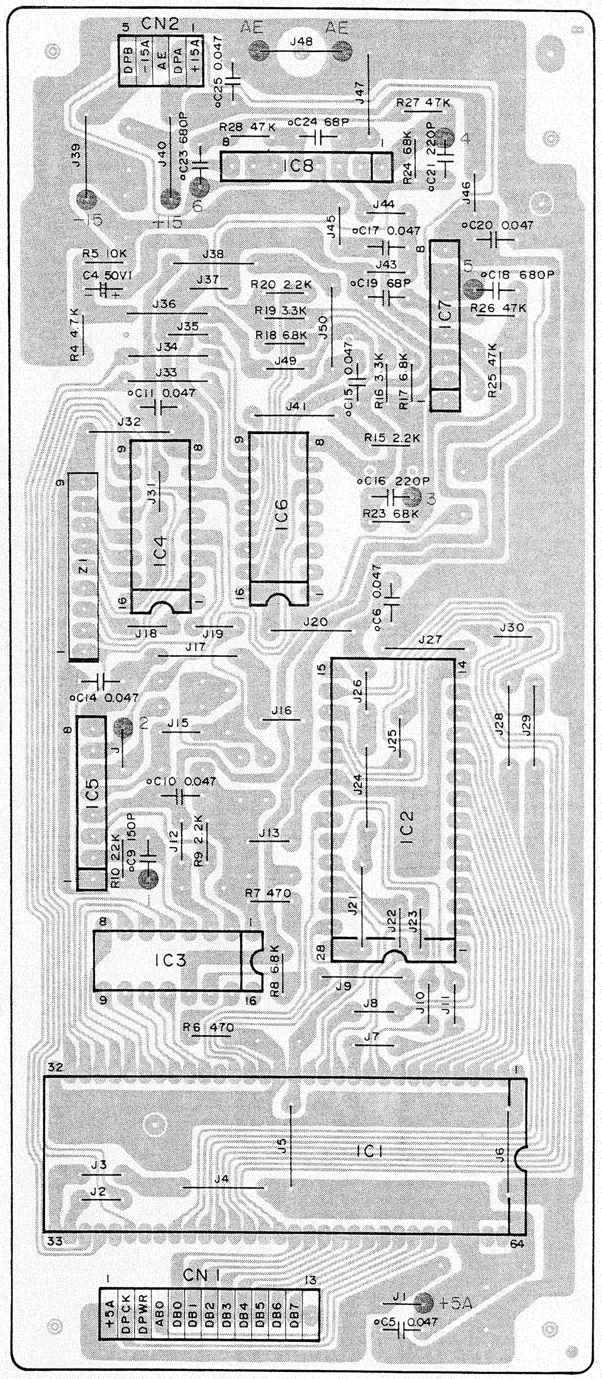
- IC'S

IC1:	SVIGC320C266
IC2, 3:	MN6635
IC4, 5:	SVIGBA9221
IC6, 7:	MN74HC4051
IC8, 9:	SVIGM5238L
IC10, 11:	SVIGM5218L
IC12~27:	SVIGUPD4066B

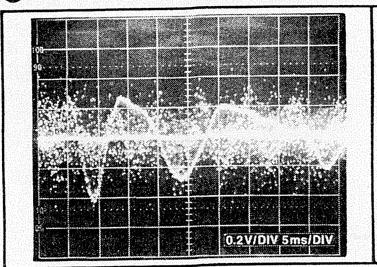
DP DRUM PERCUSSION CIRCUIT DIAGRAM & CIRCUIT BOARD


Gate Array
IC1
Wave ROM
IC2
Level Control (8 to 1 MPX)
IC4
IC5-2
Output Selector (8 to 1 MPX)
IC6
Mixing
Low-Pass Filter
IC7-1
IC7-2
IC8-1
IC8-2
D-A Converter
IC3
IC5-1
Z1
1K/2K
MAIN CN4
CN1
+5A
DPCK
DPWR
ABO
DB0
DB1
DB2
DB3
DB4
DB5
DB6
DB7
CLK
MWR
MABS
MCDT
ITEST
AD
CE
DTI
DTO
LEV
STB
CHO
MAIN CN8
CN2
+15A
DPA
AE
-15A
DPB
C5 0.047
C6 0.047
C11 0.047
C14 0.047
C15 0.047
C16 220P
R23 68K
R15 2.2K
R16 3.3K
R17 6.8K
C18 680P
R25 47K
R26 47K
C19 68P
C17 0.047
C20 0.047
C21 220P
R24 68K
R18 6.8K
R19 3.3K
R20 2.2K
C23 680P
R27 47K
R28 47K
C24 68P
C25 0.047
C9 150P
R10 2.2K
C10 0.047
R8 6.8K
R9 2.2K
R6 470
R7 470
R5 10K
C4 50V1
R4 4.7K
LSB
MSB
COMP
VLC
+5A
-15A
+15A
-6A

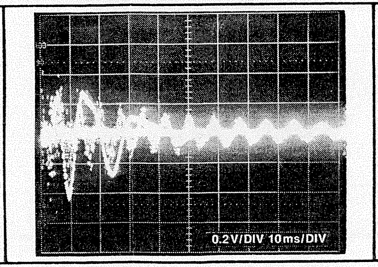
SXPG135421


CN2
AE
IC8
IC7
IC4
IC6
IC5
IC2
IC3
IC1
CN1
+5A

❶

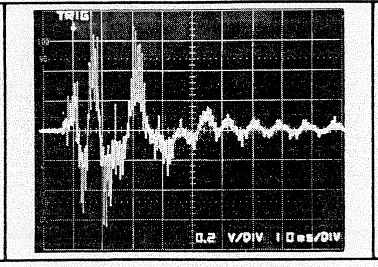


❷

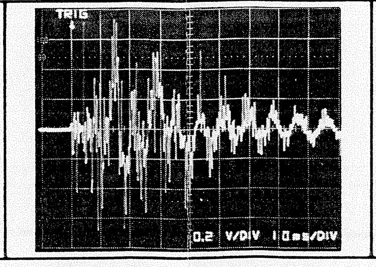


- Rhythm .... Disco I
- Tempo .... ♩=300
- Drums Volume .... Step 4

❸

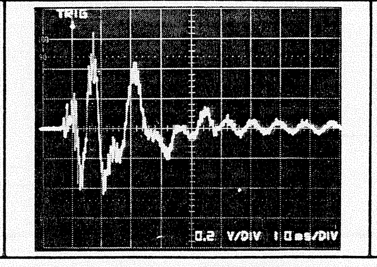


❹

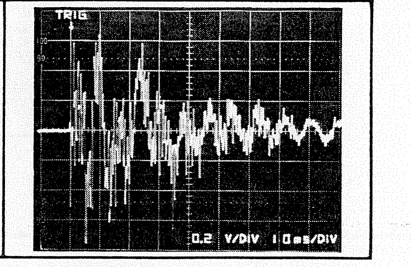


- Rhythm .... Disco I
- Tempo .... ♩=300
- Drums Volume .... Step 4

❺



❻



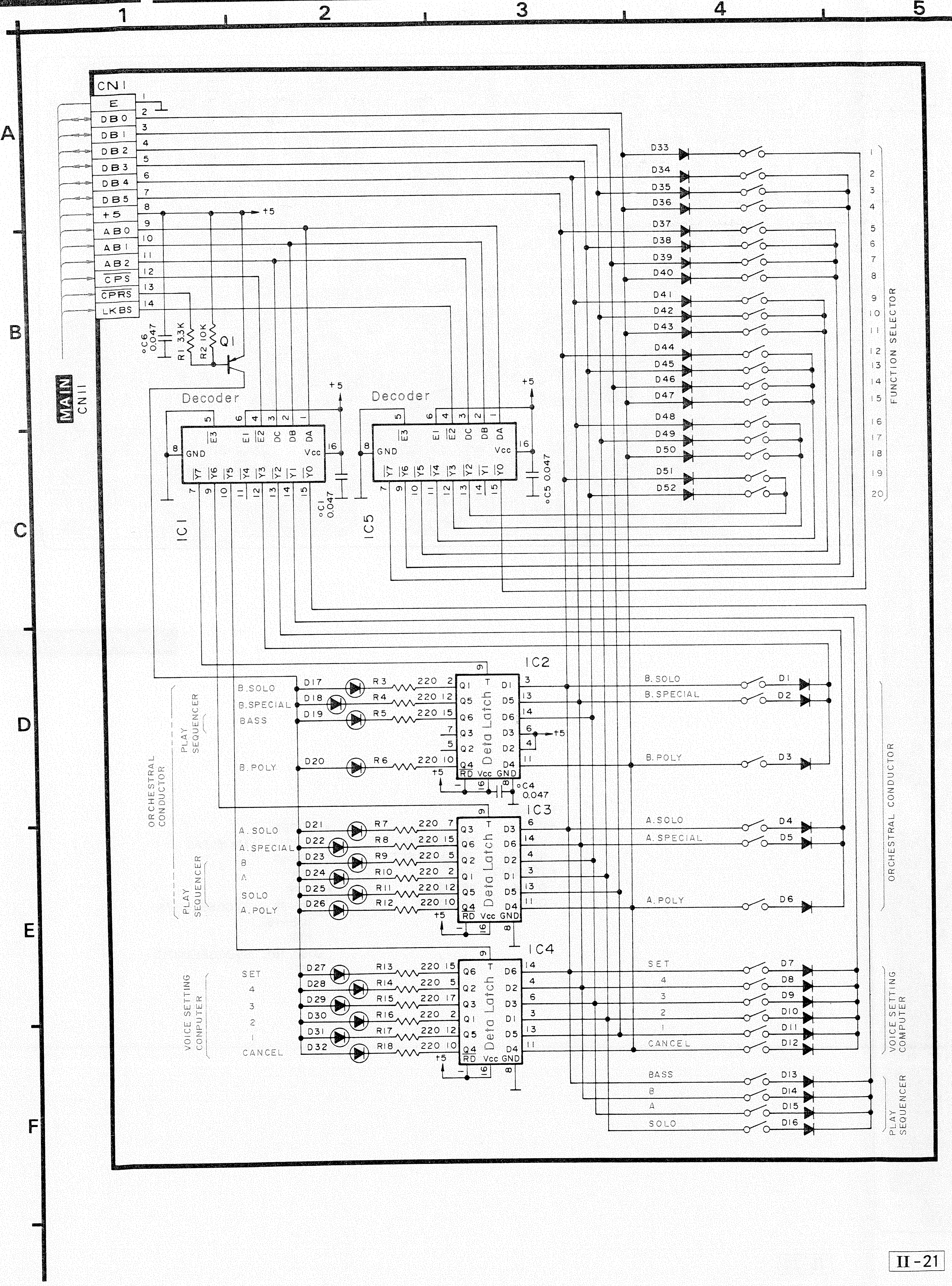
- Rhythm .... Disco I
- Tempo .... ♩=300
- Drums Volume .... Step 4

NOTES:

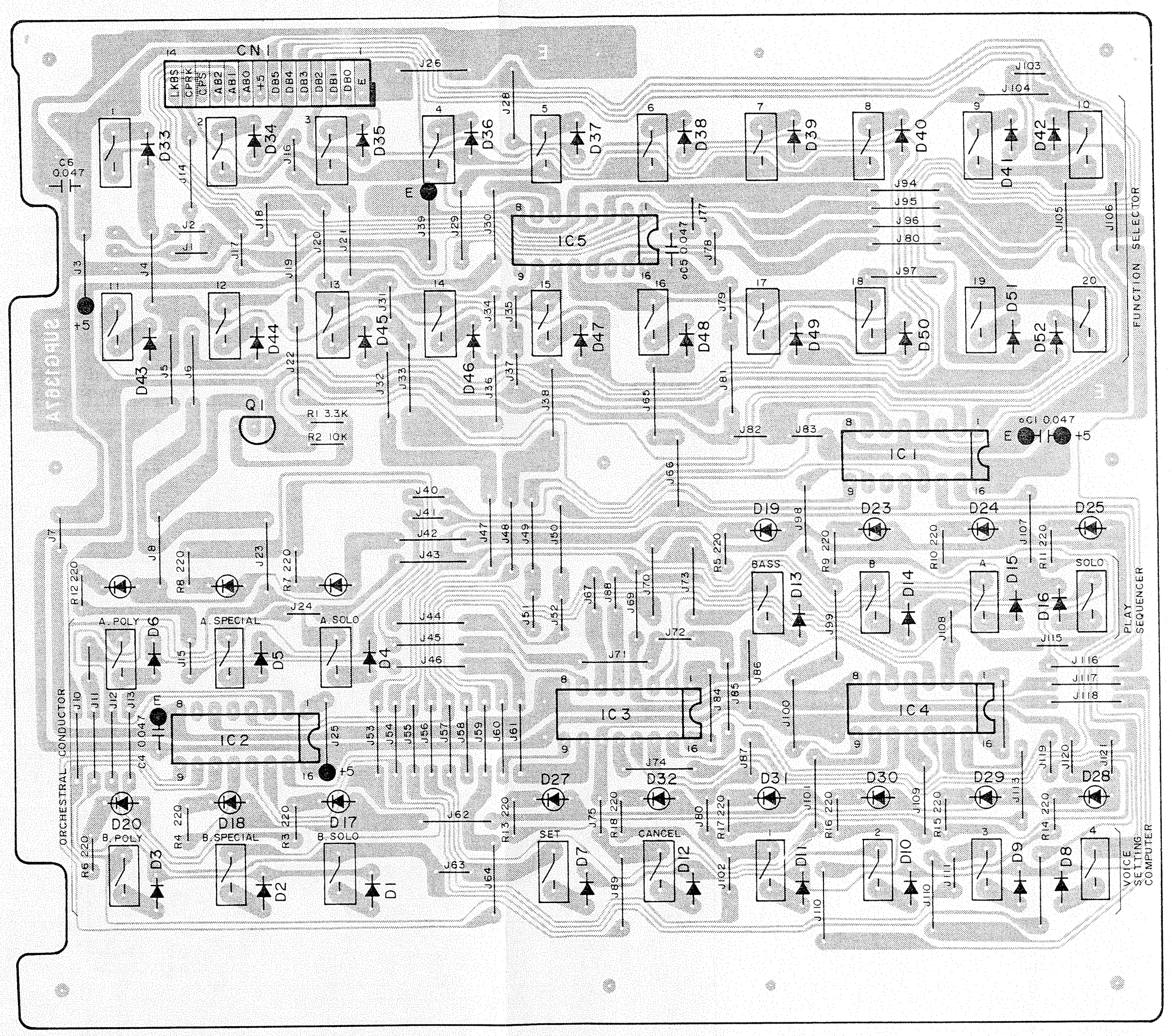
- IC'S

IC1:	MN50015PGQ
IC2:	MN231001PGW
IC3:	SVIGHA17008P
IC4, 6:	SVIGMSM4051R
IC5:	SVIGM5238L
IC7, 8:	SVIGM5218L

CONTROL PANEL I CIRCUIT DIAGRAM & CIRCUIT BOARD


1
2
3
4
5
6
A
B
C
D
E
F
MAIN CN11
CN1
E
DB0
DB1
DB2
DB3
DB4
DB5
+5
AB0
AB1
AB2
CPS
CPRS
LKBS
C6 0.047
R1 3.3K
R2 10K
Q1
Decoder
Decoder
GND
Vcc
IC1
IC5
C1 0.047
C5 0.047
D33
D34
D35
D36
D37
D38
D39
D40
D41
D42
D43
D44
D45
D46
D47
D48
D49
D50
D51
D52
FUNCTION SELECTOR
IC2
IC3
IC4
Deta Latch
Deta Latch
Deta Latch
C4 0.047
B.SOLO
B.SPECIAL
BASS
B.POLY
A.SOLO
A.SPECIAL
B
A
SOLO
A.POLY
SET
4
3
2
1
CANCEL
D17
D18
D19
D20
D21
D22
D23
D24
D25
D26
D27
D28
D29
D30
D31
D32
R3 220
R4 220
R5 220
R6 220
R7 220
R8 220
R9 220
R10 220
R11 220
R12 220
R13 220
R14 220
R15 220
R16 220
R17 220
R18 220
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
D16
PLAY SEQUENCER
ORCHESTRAL CONDUCTOR
VOICE SETTING COMPUTER

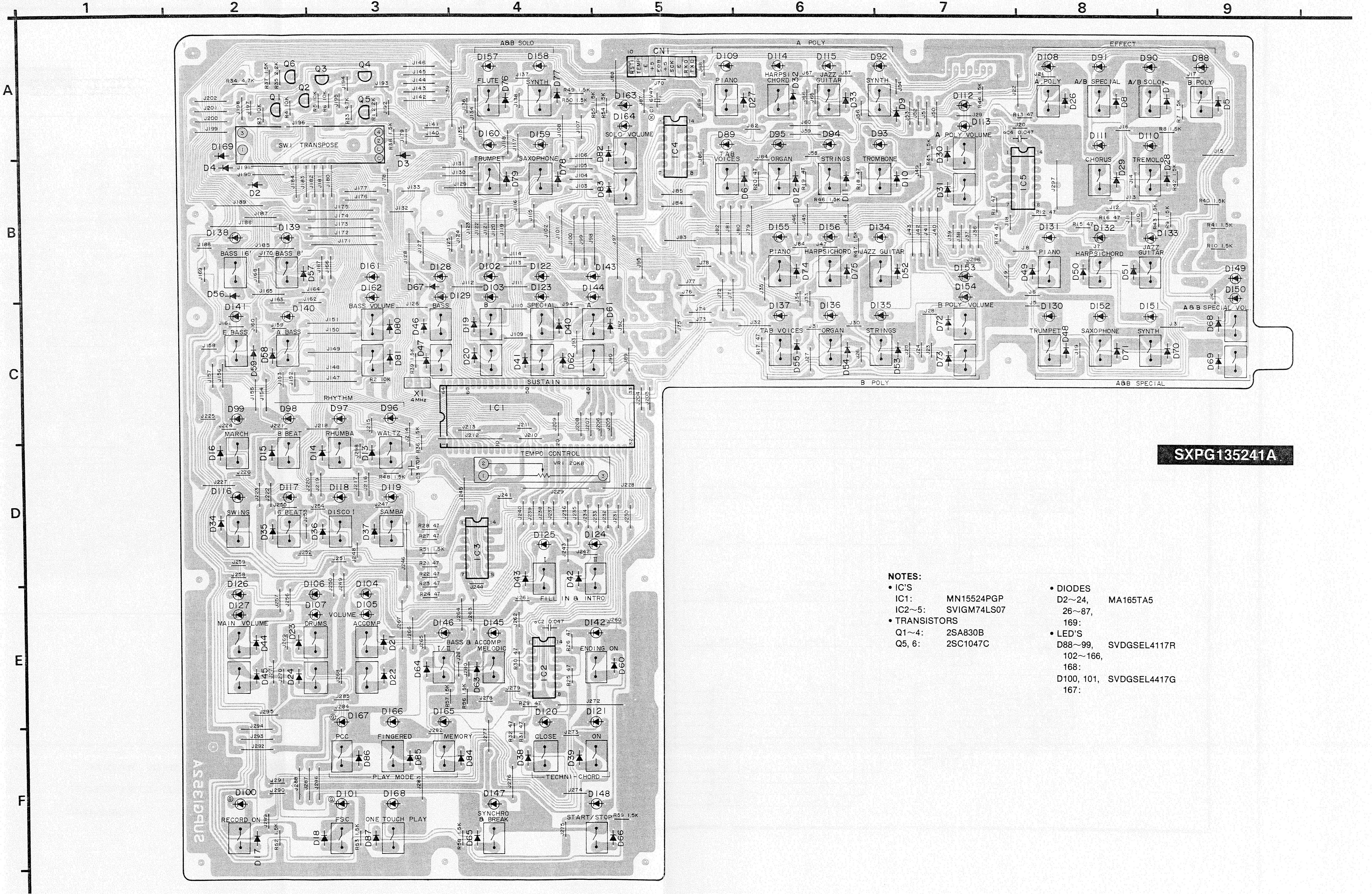
SXPG136711A


7
8
9
CN1
IC1
IC2
IC3
IC4
IC5
Q1
FUNCTION SELECTOR
PLAY SEQUENCER
ORCHESTRAL CONDUCTOR
VOICE SETTING COMPUTER
A.POLY
A.SPECIAL
A.SOLO
B.POLY
B.SPECIAL
B.SOLO
BASS
SOLO
SET
CANCEL
+5
E

NOTES:

- IC'S
  - IC1, 5: SVIGM74LS138
  - IC2~4: SVIGM74LS174
- TRANSISTOR
  - Q1: 2SA1015-GR
- DIODES
  - D1~16, 33~52: MA165TA5
- LED'S
  - D17, D18, 20~22, 26: SVDGSEL4117R
  - D19, 23~25, 27~32: SVDGSEL4117G

CONTROL PANEL II CIRCUIT BOARD

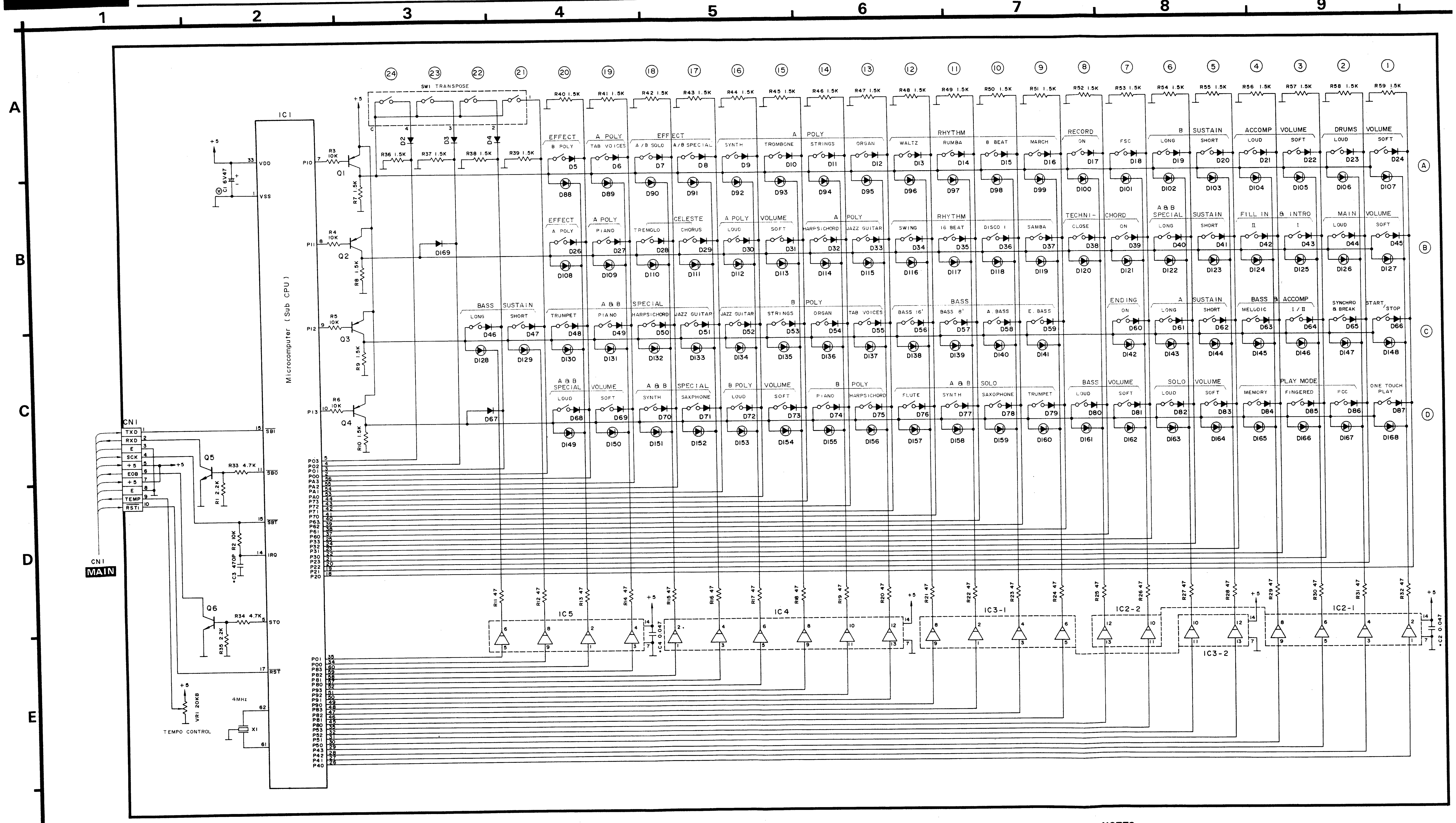

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
A&B SOLO
A POLY
EFFECT
CN1
SW1 TRANSPOSE
FLUTE
SYNTH
TRUMPET
SAXOPHONE
SOLO VOLUME
PIANO
HARPSICHORD
JAZZ GUITAR
TAB VOICES
ORGAN
STRINGS
TROMBONE
A POLY VOLUME
A POLY
A/B SPECIAL
A/B SOLO
B POLY
CHORUS
TREMOLO
BASS 16'
BASS 8'
BASS VOLUME
BASS
B
SPECIAL
A
E.BASS
A.BASS
B POLY VOLUME
A&B SPECIAL VOL
B POLY
A&B SPECIAL
RHYTHM
SUSTAIN
X1 4MHz
IC1
IC2
IC3
IC4
IC5
MARCH
8 BEAT
RHUMBA
WALTZ
TEMPO CONTROL
VR1 20KB
SWING
16 BEAT
DISCO
SAMBA
FILL IN
INTRO
I
II
MAIN VOLUME
DRUMS
ACCOMP
VOLUME
BASS & ACCOMP
I/II
MELODIC
ENDING ON
PCC
FINGERED
MEMORY
PLAY MODE
CLOSE
ON
TECHNI-CHORD
RECORD ON
FSC
ONE TOUCH PLAY
SYNCHRO & BREAK
START/STOP
SXPG135241A

NOTES:

- IC'S
  - IC1: MN15524PGP
  - IC2~5: SVIGM74LS07
- TRANSISTORS
  - Q1~4: 2SA830B
  - Q5, 6: 2SC1047C
- DIODES
  - D2~24, 26~87, 169: MA165TA5
- LED'S
  - D88~99, 102~166, 168: SVDGSEL4117R
  - D100, 101, 167: SVDGSEL4417G

CPSL

CONTROL PANEL II CIRCUIT DIAGRAM

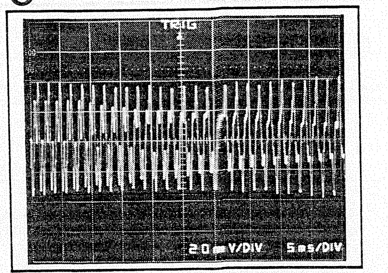

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
IC1
Microcomputer (Sub CPU)
SW1 TRANSPOSE
CN1
TXD
RXD
E
SCK
+5
EOB
+5
E
TEMP
RSTI
CN1 MAIN
Q1
Q2
Q3
Q4
Q5
Q6
VDD
VSS
SBI
SBO
SBT
IRQ
STO
RST
4MHz
X1
VR1 20KB
TEMPO CONTROL
C1 6V47
R33 4.7K
R34 4.7K
R1 2.2K
R35 2.2K
R2 10K
C3 470P
IC5
IC4
IC3-1
IC2-2
IC3-2
IC2-1
C4 0.047
C2 0.047
EFFECT
B POLY
A POLY
TAB VOICES
A/B SOLO
A/B SPECIAL
SYNTH
TROMBONE
STRINGS
ORGAN
WALTZ
RHYTHM
RUMBA
8 BEAT
MARCH
RECORD
ON
FSC
B SUSTAIN
LONG
SHORT
ACCOMP
VOLUME
LOUD
SOFT
DRUMS
PIANO
TREMOLO
CELESTE
CHORUS
SWING
16 BEAT
DISCO I
SAMBA
TECHNI-CHORD
CLOSE
A & B SPECIAL
FILL IN II
8 INTRO I
MAIN
BASS
SUSTAIN
TRUMPET
HARPSICHORD
JAZZ GUITAR
BASS 16'
BASS 8'
A. BASS
E. BASS
ENDING
MELODIC
I / II
SYNCHRO & BREAK
START/STOP
SAXPHONE
FLUTE
SAXOPHONE
SOLO
PLAY MODE
MEMORY
FINGERED
PCC
ONE TOUCH PLAY

NOTES:

- IC'S
  - IC1: MN15524PGP
  - IC2~5: SVIGM74LS07
- TRANSISTORS
  - Q1~4: 2SA830B
  - Q5, 6: 2SC1047C
- DIODES
  - D2~24, 26~87, 169: MA165TA5
- LED'S
  - D88~99, 102~166, 168: SVDGSEL4117R
  - D100, 101, 167: SVDGSEL4417G

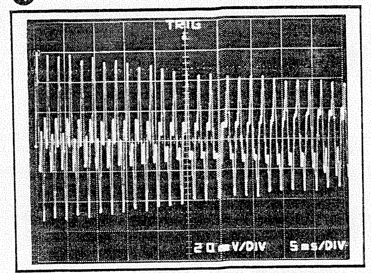
EF EFFECTOR CIRCUIT DIAGRAM & CIRCUIT BOARD

③



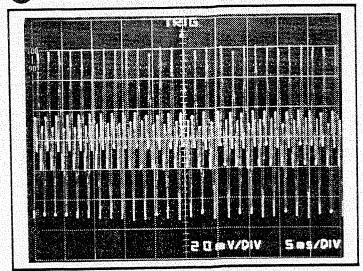
- A. Solo ....Flute
- Effect ....Solo, Celeste
- A. Solo Vol. ...Step 4 • Keyboard (A)...C4 (72)

④



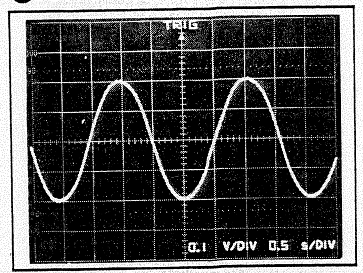
- A. Solo ....Flute
- Effect ....Solo, Celeste
- A. Solo Vol. ...Step 4 • Keyboard (A)...C4 (72)

⑥ BBD Bias

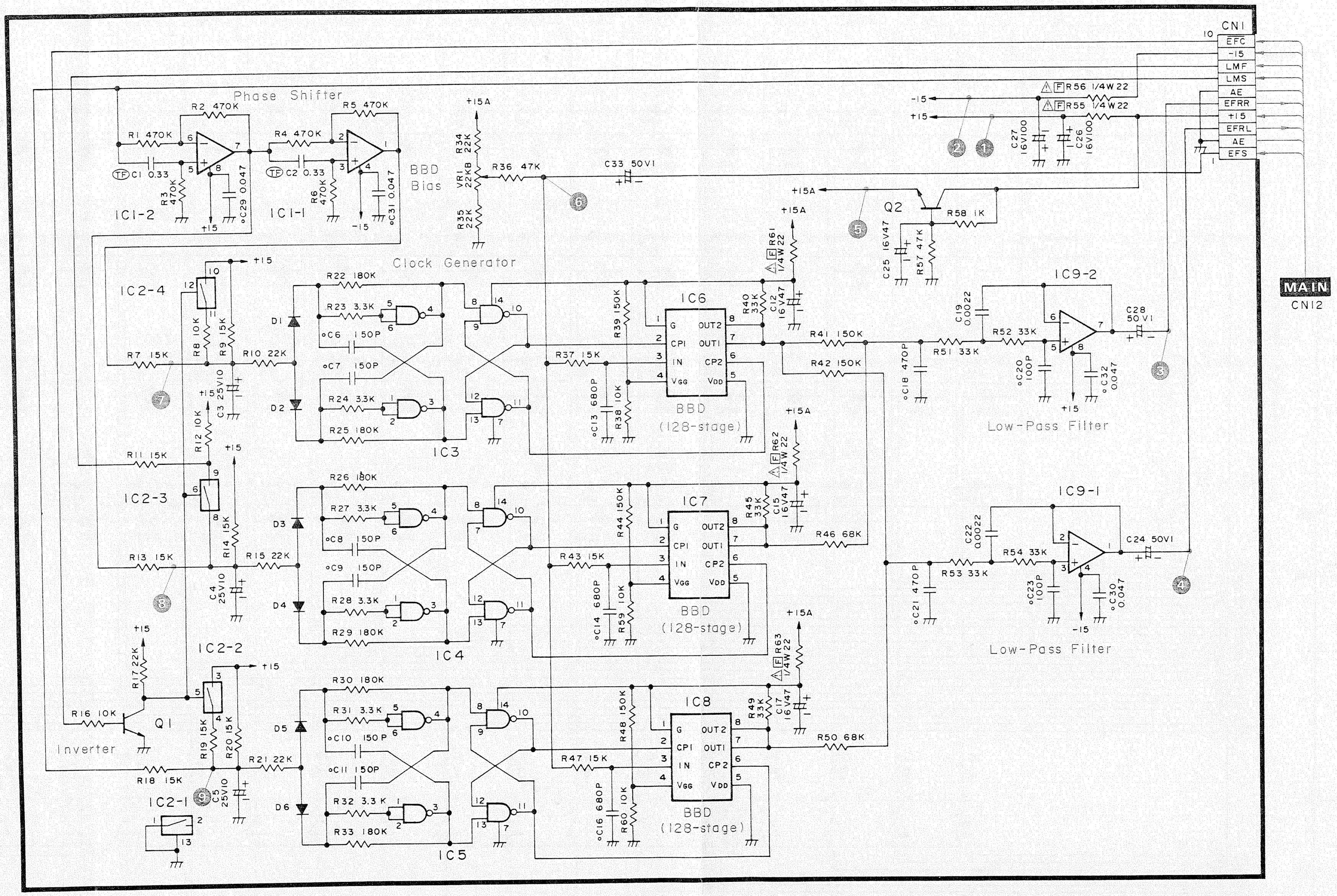


- A. Solo ....Flute
- Effect ....Solo, Celeste
- A. Solo Vol. ...Step 4 • Keyboard (A)...C4 (72)

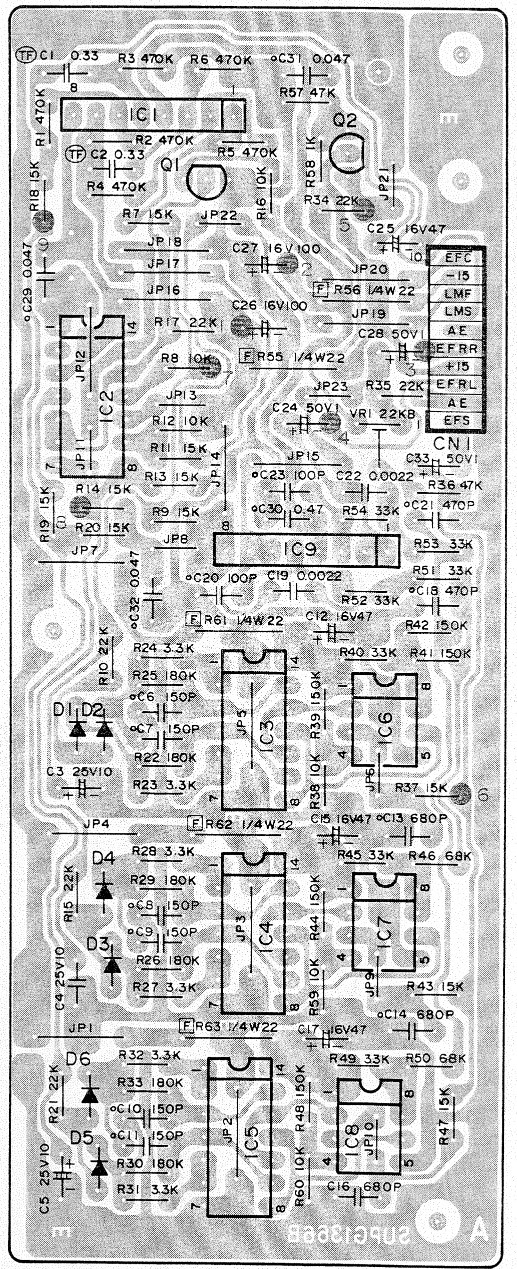
⑦ CHORUS



- Effect ....Chorus


Phase Shifter
IC1-2
IC1-1
R1 470K
R2 470K
R3 470K
R4 470K
R5 470K
R6 470K
C1 0.33
C2 0.33
C29 0.047
C31 0.047
+15
-15
+15A
BBD Bias
R34 22K
VR1 22KB
R35 22K
R36 47K
C33 50V1
Clock Generator
IC2-4
IC2-3
IC2-2
IC2-1
R7 15K
R8 10K
R9 15K
R10 22K
R11 15K
R12 10K
R13 15K
R14 15K
R15 22K
R16 10K
R17 22K
R18 15K
R19 15K
R20 15K
R21 22K
C3 25V10
C4 25V10
C5 25V10
Q1
Inverter
D1
D2
D3
D4
D5
D6
R22 180K
R23 3.3K
R24 3.3K
R25 180K
R26 180K
R27 3.3K
R28 3.3K
R29 180K
R30 180K
R31 3.3K
R32 3.3K
R33 180K
C6 150P
C7 150P
C8 150P
C9 150P
C10 150P
C11 150P
IC3
IC4
IC5
IC6
IC7
IC8
G
CPI
IN
VGG
OUT2
OUT1
CP2
VDD
BBD
(128-stage)
R37 15K
R38 10K
R39 150K
R40 33K
R41 150K
R42 150K
R43 15K
R44 150K
R45 33K
R46 68K
R47 15K
R48 150K
R49 33K
R50 68K
C13 680P
C14 680P
C16 680P
C15 16V47
C17 16V47
R61 1/4W22
R62 1/4W22
R63 1/4W22
Q2
R58 1K
R57 47K
C25 16V47
C27 16V100
C26 16V100
R56 1/4W22
R55 1/4W22
IC9-2
IC9-1
C19 0.0022
C22 0.0022
R51 33K
R52 33K
R53 33K
R54 33K
C18 470P
C21 470P
C20 100P
C23 100P
C32 0.047
C30 0.047
C28 50V1
C24 50V1
Low-Pass Filter
Low-Pass Filter
CN1
EFC
-15
LMF
LMS
AE
EFRR
+15
EFRL
AE
EFS
MAIN
CN12

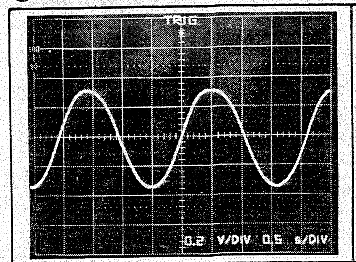
SXPG136611B


IC1
IC2
IC3
IC4
IC5
IC6
IC7
IC8
IC9
Q1
Q2
CN1
EFC
-15
LMF
LMS
AE
EFRR
+15
EFRL
AE
EFS
JP1
JP2
JP3
JP4
JP5
JP7
JP8
JP11
JP12
JP13
JP14
JP15
JP16
JP17
JP18
JP19
JP20
JP21
JP22
JP23
SUPG1366B
A

NOTES:

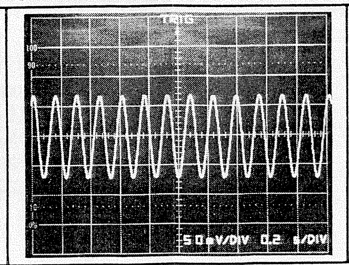
- IC'S
  - IC1, 9: SVIGM5218L
  - IC2: SVIGUPD4066B
  - IC3~5: SVIGMSM4011
  - IC6~8: MN3006
- TRANSISTORS
  - Q1, 2: 2SC2320LFG
- DIODES
  - D1~6: MA165TA5

⑦ CELESTE



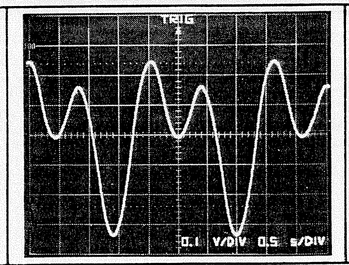
- Effect ....Celeste

⑦ TREMOLO



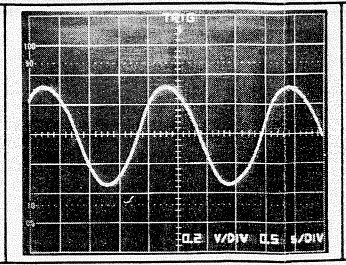
- Effect ....Tremolo

⑧ CHORUS



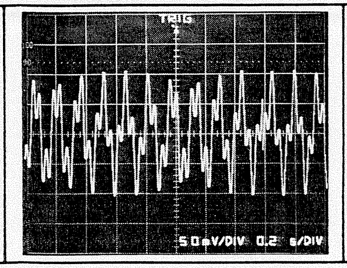
- Effect ....Chorus

⑧ CELESTE



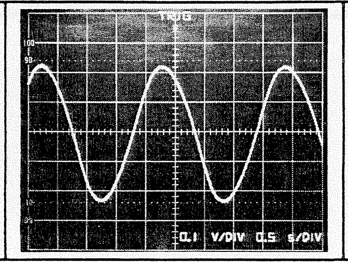
- Effect ....Celeste

⑧ TREMOLO



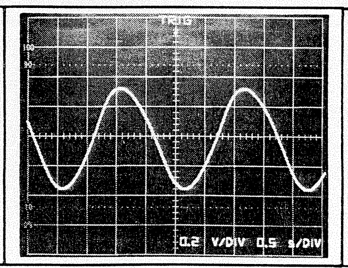
- Effect ....Tremolo

⑨ CHORUS



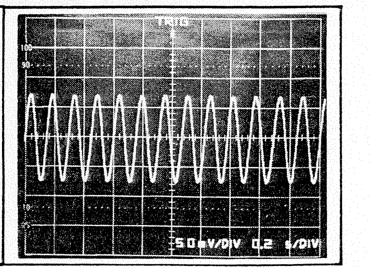
- Effect ....Chorus

⑨ CELESTE



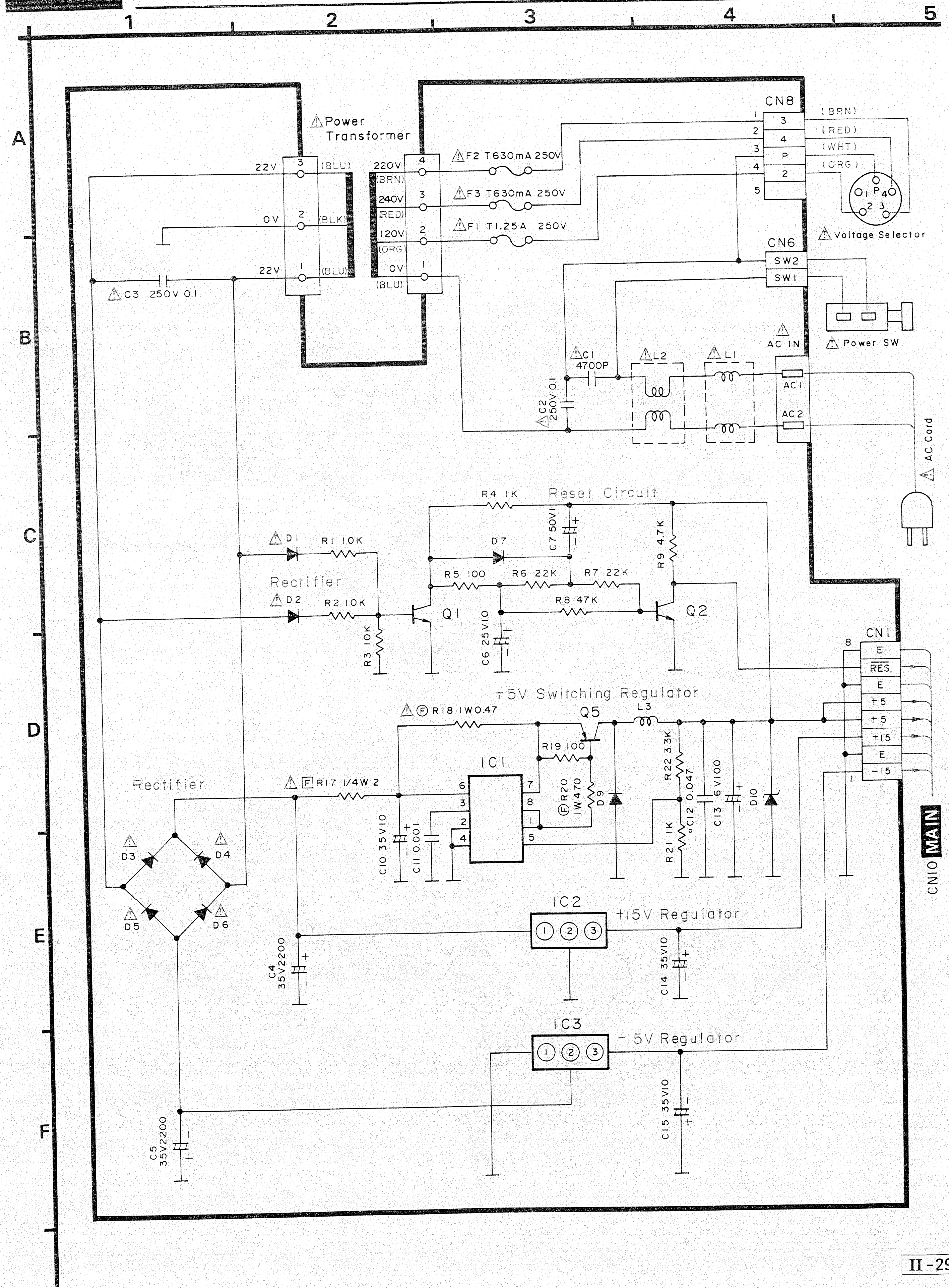
- Effect ....Celeste

⑨ TREMOLO

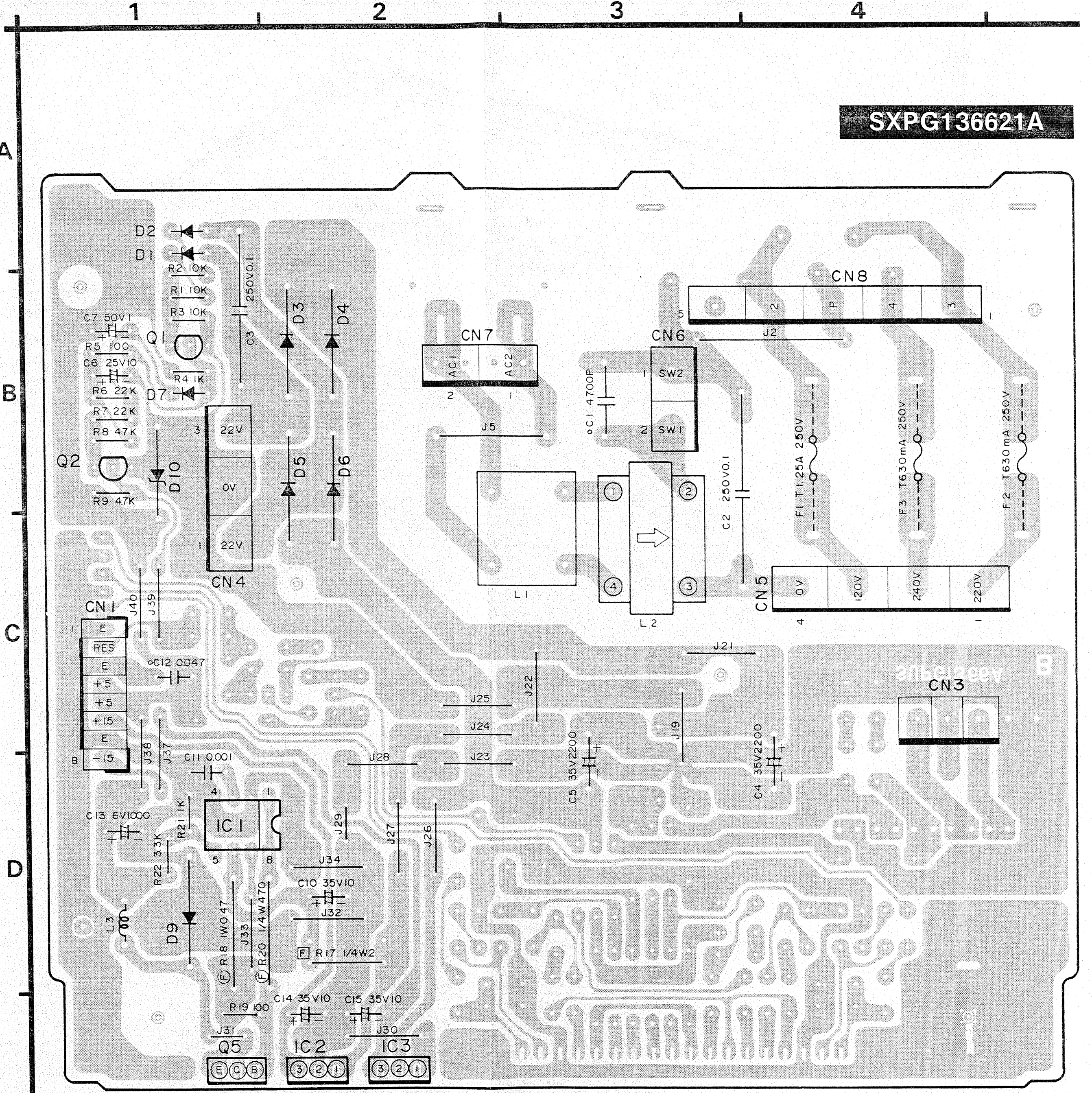


- Effect ....Tremolo

AS AMP & POWER SUPPLY CIRCUIT DIAGRAM

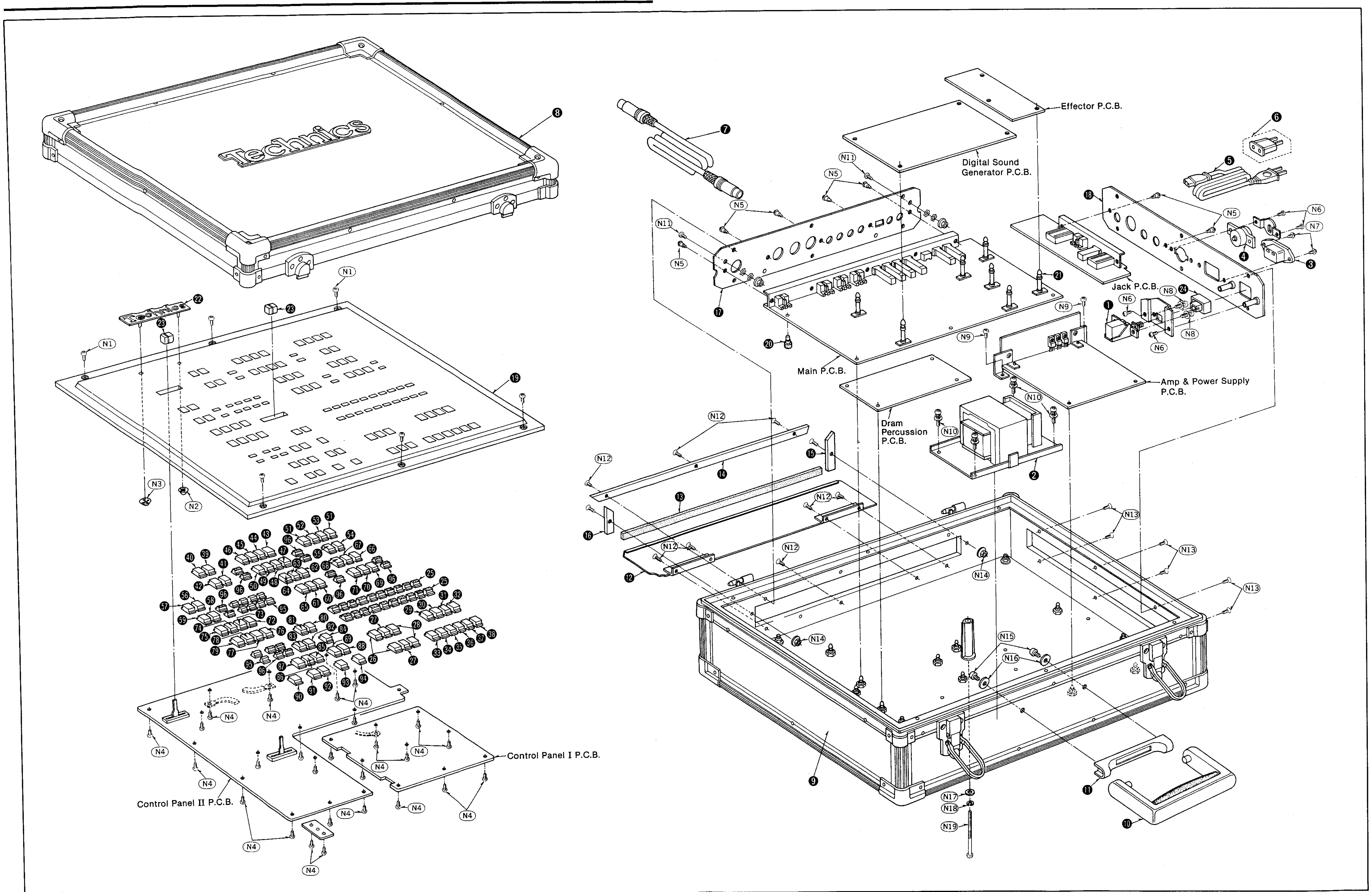

1
2
3
4
5
A
B
C
D
E
F
⚠Power Transformer
22V
0V
22V
(BLU)
(BLK)
(BLU)
220V
(BRN)
240V
(RED)
120V
(ORG)
0V
(BLU)
⚠F2 T630mA 250V
⚠F3 T630mA 250V
⚠F1 T1.25A 250V
⚠C3 250V 0.1
CN8
(BRN)
(RED)
(WHT)
(ORG)
⚠Voltage Selector
CN6
SW2
SW1
⚠Power SW
⚠ AC IN
AC1
AC2
⚠C1 4700P
⚠C2 250V 0.1
⚠L2
⚠L1
⚠AC Cord
R4 1K
Reset Circuit
C7 50V1
D7
R9 4.7K
⚠D1
R1 10K
Rectifier
⚠D2
R2 10K
R3 10K
R5 100
R6 22K
R7 22K
R8 47K
Q1
Q2
C6 25V10
CN1
E
RES
E
+5
+5
+15
E
-15
+5V Switching Regulator
⚠Ⓕ R18 1W0.47
Q5
L3
R19 100
IC1
Ⓕ R20 1W470
D9
R22 3.3K
C12 0.047
R21 1K
C13 6V100
D10
Rectifier
⚠Ⓕ R17 1/4W 2
C10 35V10
C11 0.001
⚠D3
⚠D4
⚠D5
⚠D6
IC2
+15V Regulator
C4 35V2200
C14 35V10
IC3
-15V Regulator
C5 35V2200
C15 35V10
CN10
MAIN

AS AMP & POWER SUPPLY CIRCUIT BOARD


1
2
3
4
A
B
C
D
E
F
SXPG136621A
D2
D1
R2 10K
R1 10K
R3 10K
C3 250V0.1
D3
D4
C7 50V1
R5 100
C6 25V10
Q1
R4 1K
D7
R6 22K
R7 22K
R8 47K
D5
D6
D10
Q2
R9 47K
22V
0V
22V
CN4
CN7
AC1
AC2
C1 4700P
CN6
SW2
SW1
CN8
C2 250V0.1
F1 T1.25A 250V
F3 T630mA 250V
F2 T630mA 250V
L1
L2
CN5
0V
120V
240V
220V
CN1
E
RES
E
+5
+5
+15
E
-15
C12 0.047
J21
J22
J23
J24
J25
J26
J27
J28
J29
J32
J34
J37
J38
J39
J40
C11 0.001
C5 35V2200
C4 35V2200
J19
CN3
C13 6V1000
R21 1K
IC1
R22 3.3K
C10 35V10
L3
D9
R18 1W0.47
R20 1/4W470
R17 1/4W2
R19 100
C14 35V10
C15 35V10
J31
J30
Q5
IC2
IC3

NOTES:
- IC'S
  IC1: SVIGM5291P
  IC2: SVIGM5F7815
  IC3: SVIGM5F7915
- TRANSISTORS
  Q1, 2: 2SC2320LFG
  Q5: 2SB953A
- DIODES
  D1, 2: SVDGERA1502Y
  D3~6: SVDGS2V20
  D7: MA165TA5
  D9: SVDGRK14
  D10: MA2062LF

EXPLODED VIEWS OF CABINET


Technics
Effector P.C.B.
Digital Sound Generator P.C.B.
Jack P.C.B.
Main P.C.B.
Amp & Power Supply P.C.B.
Dram Percussion P.C.B.
Control Panel I P.C.B.
Control Panel II P.C.B.
N1
N2
N3
N4
N5
N6
N7
N8
N9
N10
N11
N12
N13
N14
N15
N16
N17
N18
N19

REPLACEMENT PARTS LIST......Cabinet and Chassis Parts

Notes:

1. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
2. ○ mark are new parts.
3. For part No. with area mark, check the area when placing an order.

■ Cabinet & Chassis Parts

Ref. No.	Part No.	Description	Per/Set
		SWITCH	
1 ⚠	ESB8213	Power Switch	1
		TRANSFORMER	
2 ⚠	SLTGAC30	Power Transformer	1
		AC INLET	
3 ⚠	SJSG450A	AC Inlet	1
		VOLTAGE SELECTOR	
4 ⚠	ESE3758	Voltage Selector	1
		AC CORD, ATTACHMENT PLUG	
5 EK ⚠	SJAG47	AC Cord, [EK] area	1
5 XR XL ⚠	SJAG48	AC Cord, [XR], [XL] areas	1
5 EW ⚠	SJAG49	AC Cord, [EW] area	1
5 others ⚠	SJAG46	AC Cord, other area	1
6 X ⚠	SJP5213-1	Attachment Plug, [X] area	1
		MIDI CABLE	
7	SJEG61A	MIDI Cable	1
		CABINET	
8	SKZG8430A	Hingeted Cover	1
9	SKMG1660A	Cabinet Case	1
10	SKXG140A	Handle	1
11	SKXG150A	Handle (Base)	1
12	SUVG1170A	Rear Jack Cover	1
13	SHRGA5530A	Felt	1
14	SBMG31A	Magnet	1
15	SBMG41A	Magnet	1
16	SBMG51A	Magnet	1
17	SGXG2650A	Accessory Panel, Rear	1
18	SGXG2660A	Accessory Panel, Right Side	1
19	SGWG1860A	Control Panel	1
20	SHGG8011A	P.C.B. Sapport Rubber	1
21	SHRG9340A	P.C.B. Horder	7
22	SGBG150A	Technics Badge	1
		KNOBS, BUTTONS	
23	SBNG7050A	KNOB (TRANSPOSE, TEMPO)	2
24	SBCG110B	BOTTON, POWER SW.	1
25	SBCG260C	FUNCTION SELECTOR (1~20)	20
26	SBCG270F01	POLY (A, B) } ORCHESTRAL CONDUCTOR	2
27	SBCG270G01	SPECIAL (A, B)	2
28	SBCG270D01	SOLO (A, B)	2
29	SBCG270A17	BASS } PLAY SEQUENCER	1
30	SBCG270F18	B	1
31	SBCG270F17	A	1
32	SBCG270D01	SOLO	1
33	SBCG270C14	SET } VOICE SETTING COMPUTER	1
34	SBCG270A12	CANCEL	1
35	SBCG270A13	1	1
36	SBCG270A14	2	1
37	SBCG270A15	3	1
38	SBCG270A16	4	1
39	SBCG270D07	SYNTH } A & B SOLO	1
40	SBCG270D03	FLUTE	1
41	SBCG270D04	SAXPHONE	1
42	SBCG270D05	TRUMPET	1
43	SBCG270F19	SYNTH } A POLY	1
44	SBCG270F03	JAZZ GUITAR	1
45	SBCG270F04	HARPSICHORD	1
46	SBCG270F05	PIANO	1
47	SBCG270F06	TROMBONE	1
48	SBCG270F07	STRINGS	1
49	SBCG270F08	ORGAN	1
50	SBCG270G02	TAB VOICES	1
51	SBCG270F01	POLY } EFFECT	2
52	SBCG270G01	SPECIAL	1
53	SBCG270D01	SOLO	1
54	SBCG270C01	TREMOLO	1
55	SBCG270C02	CHORUS	1
56	SBCG270A01	BASS 8′ } BASS	1
57	SBCG270A02	BASS 16′	1
58	SBCG270A03	ACOUSTIC BASS	1
59	SBCG270A04	ELECTRIC BASS	1
60	SBCG270F07	STRINGS } B POLY	1
61	SBCG270F08	ORGAN	1
62	SBCG270F09	JAZZ GUITAR	1
63	SBCG270F10	HARPSICHORD	1
64	SBCG270F11	PIANO	1
65	SBCG270G02	TABVOICES	1
66	SBCG270G03	JAZZ GUITOR } A & B SPECIAL	1
67	SBCG270G04	HARPSICHORO	1
68	SBCG270G05	PIANO	1
69	SBCG270G11	SYNTH	1
70	SBCG270G07	SAXPHONE	1
71	SBCG270G08	TRUMPET	1
72	SBCG270C03	WALTZ } RHYTHM	1
73	SBCG270C04	RHUMBA	1
74	SBCG270C05	8 BEAT	1
75	SBCG270C06	MARCH	1
76	SBCG270C07	SAMBA	1
77	SBCG270C08	DISCO I	1
78	SBCG270C09	16 BEAT	1
79	SBCG270C10	SWING	1

Ref. No.	Part No.	Description	Per/Set
80	SBCG270A05	II } FILL IN & INTRO	1
81	SBCG270A06	I	1
82	SBCG270A07	MELODIC } BASS & ACCOMP	1
83	SBCG270A08	I/II	1
84	SBCG270G09	ON, ENDING	1
85	SBCG270A10	MEMORY } PLAY MODE	1
86	SBCG270A11	FINGERED	1
87	SBCG270C12	PCC	1
88	SBCG270A09	ON } TECHNI-CHORD	1
89	SBCG270C11	CLOSE/PROGRAM	1
90	SBCG270D06	ON, RECORD	1
91	SBCG270G10	FSC	1
92	SBCG270H02	ONE TOUCH PLAY	1
93	SBCG270C13	SYNCHRO & BREAK	1
94	SBCG270H01	START/STOP	1
95	SBCG260A	MAIN VOLUME, SUSTAIN	10

Ref. No.	Part No.	Description	Per/Set
96	SBCG260C	VOLUME { A & B SOLO A POLY B POLY A & B SPECIAL BASS, DRUMS ACCOMP	14
		SCREWS & WASHERS	
N1	XTB4+14CFZ	Screw	6
N2	SNEG1770A	Speed Nut	1
N3	SNEG1780A	Speed Nut	1
N4	XTV3+10G	Screw	27
N5	SNEG1241A	Screw	7
N6	XTV3+8BFZ	Screw	4
N7	XTW3+8JFZ	Screw	2
N8	XYN3+F10FZ	Screw, with Washer	2
N9	XTB35+8A	Screw	2
N10	XYN4+F10	Screw, with Washer	4
N11	XTN3+10FFZ	Screw	2
N12	XTS3+16CFZ	Screw	10
N13	XTS3+14CFZ	Screw	6
N14	SNE491	Nut	2
N15	XST4+12FN	Screw	2
N16	XWG4X20FN	Washer	2
N17	XWG5FZ	Washer	1
N18	XWA5BFZ	Washer	1
N19	SNEG960B	Screw	1

REPLACEMENT PARTS LIST......P.C.B. and Wiring Parts

Notes:

1. Printed circuit boards are supplied only during the period of production.
2. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The "S" mark is service standard parts and may differ from production parts.
4. ○ mark are new parts.
5. For part No. with area mark, check the area when placing an order.

■ Numbering System of Resistor

- All resistors are 1/4 WATT, ±5% TOLERANCE unless otherwise designated in the schematic diagram.
- Resistors with Ⓕ symbolic mark are Flame-Proof resistors.
- Resistors with 🄵 symbolic mark are fuse type Flame-Proof resistors.

Resistor Type	Wattage	Tolerance
ERD : Carbon ERD—F : Carbon, Flame-Proof	S2 : 1/4W 2 : 1/4W 25 : 1/4W	F : ±1% G : ±2% J : ±5%
ERQ : Metal Oxide Fuse Type ERX : Metal Film	14 : 1/4W 1 : 1W	

Example:

Carbon:	ERD	S2	T	J	101	
	Type	Wattage	Shape	Tolerance	Value	
Carbon Flame-Proof:	ERD	2	F	C	G	101
	Type	Wattage	Flame-Proof	Fuse Type	Tolerance	Value
Metal Oxide Fuse Type:	ERQ	14	A	J	2R0	
	Type	Wattage	Flame-Proof	Tolerance	Value	
Metal Oxide (Metal Film):	ERG	1	AN	J	221	
	Type	Wattage	Shape	Tolerance	Value	

■ Numbering System of Capacitor

- All capacitors are microfarads unless otherwise specified in the schematic diagram.

Capacitor Type	Symbol Mark	Voltage		Tolerance
		ECEA Type	Others	
ECEA(T) : Electrolytic		0J : 6.3V	1H : 50V	ECEA Type : ±20%
ECEA—N : Non-Polar Electrolytic	Ⓝ	1C : 16V	1E : 25V	J : ±5%
ECEA—Y : Non-Polar Electrolytic	Ⓨ	1E : 25V		K : ±10%
ECEA—M : Electrolytic, MSR Series	(MS)	1V : 35V		Z : $^{+80}_{-20}$%
ECEA—K : Electrolytic, miniature type	Ⓚ	1H : 50V		
ECQV : TF Capacitor	(TF)	35 : 35V		
ECQB : Polyester	(TF)			
ECQM(G) : Polyester				
ECC : Ceramic	○			
ECK : Ceramic	○			

Example:

Electrolytic:	ECEA(T)	0J	U(R)	470		
	Type	Voltage	Peculiarity use	Value		
MSR Series:	ECEA	50	M	1	R	
	Type	Voltage	Peculiarity use	Value	Special use	
TF, Polyester:	ECQV	1H	104	J		
	Type	Voltage	Value	Tolerance		
Ceramic:	ECC	R	1H	220	J	
	Type	Shape	Voltage	Value	Tolerance	
Ceramic:	ECK	R	1E	473	Z	V
	Type	Shape	Voltage	Value	Tolerance	Peculiarity use

■ PRINTED CIRCUIT BOARD

	Ref. No.	Part No.	Description	Per/Set
○	EZ	SXPG136541	Main, [EZ] area	1
○	others	SXPG136521	Main, Except [EZ] area	1
		SXPG135121	Digital Sound Generator	1
		SXPG135421	Drum Percussion	1
		SXPG136611B	Effector	1
○		SXPG136711A	Control Panel I	1
○		SXPG135241	Control Panel II	1
○		SXPG136621A	Amp & Power Supply	1
○	EZ	SXPG136721B	Jack, [EZ] area	1
○	others	SXPG136711B	Jack, Except [EZ] area	1

MAIN MAIN CIRCUIT

	Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUITS			
	IC1	SVIG7810H	1 chip 8 bit Microcomputer	1
	IC2	SVIGM6050211	Gate Array	1
○	IC3	SVIG05AC30A0	512K bit EP ROM	1
	IC4	SVIGD446415L	64K bit S RAM	1
	IC6	SVIGM74LS05	Hex Inverter O.C.	1
	IC7	SVIGM74LS07	Hex Buffer O.C.	1
	IC8	SVIGPC900	Photo Coupler	1
	IC9, 10, 36~38, 41, 43~48, 52~54	SVIGM5218L	Operational Amplifier	15
	IC11	SVIG2000C209	2M bit Wave ROM	1
	IC12, 13	MN6635	Digital Sound Processor	2
	IC14, 15	SVIGBA9221	12 bit D-A Converter	2
	IC16, 17	MN74HC4051	8-channel Multiplexer	2
	IC18, 19	SVIGM5238L	Operational Amplifier	2
	IC20~35	SVIGUPD4066B	Quadruple Bilateral Switch	16
	IC39, 40	SVIGTC4053BP	Triple 2-channel Multiplexer	2
	IC49~51	SVIGM5241L	Dual VCA	3
	IC56	SVIGLM1894N	Dynamic Noise Reduction	1
	TRANSISTORS			
S	Q1, 3, 8, 11, 12, 15, 16, 19, 20, 23, 24, 27, 28, 34, 39	2SA1015-GR	2SA933STRS	15
S	Q2, 9, 10, 13, 14, 17, 18, 21, 22, 25, 26, 36, 41	2SC2320LFG	2SC1310FG	13
	Q4~7, 100, 101	2SJ40CD	FET	6
	Q29~33, 38, 43	2SK381D	FET	7
	Q35, 40	2SC3940ARS		2
	Q37, 42	2SA1534ARS		2
	DIODES			
	D1~9, 11~13, 50~58	MA165TA5		21

	Ref. No.	Part No.	Description	Per/Set
	OSCILLATORS			
	X1	SVQG49S1500T	15MHz, Quartz Oscillator	1
	X2	EF0FC4004A3	4MHz, Ceramic Oscillator	1
	X3	SVQG49S1600T	16MHz, Quartz Oscillator	1
	COMPONENT COMBINATIONS			
	Z3	EXBP88472JM	4.2KΩ×8	1
	Z4, 5	EXKS14Z2073	1K/2KΩ, Ladder Network	2
	COILS			
	L1	SLQG13W6D1P	Coil	1
	L4~9	SLQG15W23APS	Coil } EZ area	6
	L10	SLCGRN2	Coil	1
	JACKS			
	JK1~6	SJJG400A	LINE OUT (R/R+L, L), Bass, DRUMS (R/R+L, L), AUX IN	6
	JK7~9	SJSG1370A	MIDI (IN, OUT, THRU)	3
	JK10	SJJG490A	EXT I/O (FD)	1
	SWITCH			
	SW2	SSSG2002A	MAIN MIX	1
	RESISTORS			
	R1	ERDS2TJ221	220Ω	1
	R2	ERDS2TJ331	330Ω	1
	R3, 4	ERDS2TJ101	100Ω	2
	R5	ERDS2TJ221	220Ω	1
	R6	ERDS2TJ472	4.7KΩ	1
	R7, 8	ERDS2TJ103	10KΩ	2
	R9	ERDS2TJ102	1KΩ	1
	R10, 11	ERDS2TJ472	4.7KΩ	2
	R12	ERDS2TJ333	33KΩ	1
	R13	ERDS2TJ330	33Ω	1
	R14	ERDS2TJ681	680Ω	1
	R15	ERDS2TJ330	33Ω	1
	R16	ERDS2TJ102	1KΩ	1
	R17	ERDS2TJ332	3.3KΩ	1
	R18	ERDS2TJ471	470Ω	1
	R19	ERDS2TJ473	47KΩ	1
	R20	ERDS2TJ184	180KΩ	1
	R21, 22	ERDS2TJ472	4.7KΩ	2
	R25	ERDS2TJ333	33KΩ	1
	R26	ERDS2TJ222	2.2KΩ	1
	R33	ERDS2TJ105	1MΩ	1
	R35	ERDS2TJ474	470KΩ	1
	R36	ERDS2TJ124	120KΩ	1
	R37	ERDS2TJ184	180KΩ	1
	R38	ERDS2TJ474	470KΩ	1
	R39	ERDS2TJ124	120KΩ	1
	R40	ERDS2TJ184	180KΩ	1
	R41	ERDS2TJ474	470KΩ	1
	R42	ERDS2TJ124	120KΩ	1
	R43	ERDS2TJ104	100KΩ	1
	R44	ERDS2TJ474	470KΩ	1
	R45	ERDS2TJ124	120KΩ	1
	R46	ERDS2TJ104	100KΩ	1
	R47	ERDS2TJ222	2.2KΩ	1
	R48	ERDS2TJ332	3.3KΩ	1
	R49	ERDS2TJ153	15KΩ	1
	R50	ERDS2TJ683	68KΩ	1
	R51	ERDS2TJ332	3.3KΩ	1

Ref. No.	Part No.	Description	Per/Set
R52	ERDS2TJ102	1KΩ	1
R54, 55	ERDS2TJ471	470Ω	2
R56	ERDS2TJ123	12KΩ	1
R57, 58	ERDS2TJ471	470Ω	2
R61, 62	ERDS2TJ472	4.7KΩ	2
R63	ERDS2TJ151	150Ω	1
R64, 65	ERDS2TJ331	330Ω	2
R66	ERDS2TJ473	47KΩ	1
R67	ERDS2TJ151	150Ω	1
R68, 69	ERDS2TJ331	330Ω	2
R70	ERDS2TJ473	47KΩ	1
R71	ERDS2TJ151	150Ω	1
R72, 73	ERDS2TJ331	330Ω	2
R74	ERDS2TJ473	47KΩ	1
R75	ERDS2TJ151	150Ω	1
R76, 77	ERDS2TJ331	330Ω	2
R78	ERDS2TJ473	47KΩ	1
R79	ERDS2TJ151	150Ω	1
R80, 81	ERDS2TJ331	330Ω	2
R82	ERDS2TJ473	47KΩ	1
R83	ERDS2TJ151	150Ω	1
R84, 85	ERDS2TJ331	330Ω	2
R86	ERDS2TJ473	47KΩ	1
R87	ERDS2TJ151	150Ω	1
R88, 89	ERDS2TJ331	330Ω	2
R90	ERDS2TJ473	47KΩ	1
R91	ERDS2TJ151	150Ω	1
R92, 93	ERDS2TJ331	330Ω	2
R94	ERDS2TJ473	47KΩ	1
R95	ERDS2TJ104	100KΩ	1
R96	ERDS2TJ224	220KΩ	1
R97	ERDS2TJ333	33KΩ	1
R98	ERDS2TJ151	150Ω	1
R99, 100	ERDS2TJ331	330Ω	2
R101	ERDS2TJ473	47KΩ	1
R102	ERDS2TJ151	150Ω	1
R103, 104	ERDS2TJ331	330Ω	2
R105	ERDS2TJ473	47KΩ	1
R106	ERDS2TJ151	150Ω	1
R107, 108	ERDS2TJ331	330Ω	2
R109	ERDS2TJ473	47KΩ	1
R110	ERDS2TJ151	150Ω	1
R111, 112	ERDS2TJ331	330Ω	2
R113	ERDS2TJ473	47KΩ	1
R114	ERDS2TJ151	150Ω	1
R115, 116	ERDS2TJ331	330Ω	2
R117	ERDS2TJ473	47KΩ	1
R118	ERDS2TJ151	150Ω	1
R119, 120	ERDS2TJ331	330Ω	2
R121	ERDS2TJ473	47KΩ	1
R122	ERDS2TJ151	150Ω	1
R123, 124	ERDS2TJ331	330Ω	2
R125	ERDS2TJ473	47KΩ	1
R126	ERDS2TJ151	150Ω	1
R127, 128	ERDS2TJ331	330Ω	2
R129, 130	ERDS2TJ473	47KΩ	2
R132～135	ERDS2TJ471	470Ω	4
R136	ERDS2TJ183	18KΩ	1
R200	ERDS2TJ103	10KΩ	1
R201	ERDS2TJ682	6.8KΩ	1
R202～205	ERDS2TJ103	10KΩ	4
R206～214	ERDS2TJ223	22KΩ	9
R215	ERDS2TJ473	47KΩ	1
R216	ERDS2TJ472	4.7KΩ	1
R217～219	ERDS2TJ473	47KΩ	3
R220	ERDS2TJ153	15KΩ	1
R221	ERDS2TJ472	4.7KΩ	1
R222～224	ERDS2TJ473	47KΩ	3

Ref. No.	Part No.	Description	Per/Set
R226	ERDS2TJ682	6.8KΩ	1
R227, 228	ERDS2TJ473	47KΩ	2
R229	ERDS2TJ153	15KΩ	1
R231	ERDS2TJ393	39KΩ	1
R232	ERDS2TJ102	1KΩ	1
R233	ERDS2TJ223	22KΩ	1
R235	ERDS2TJ683	68KΩ	1
R236	ERDS2TJ222	2.2KΩ	1
R237	ERDS2TJ223	22KΩ	1
R240	ERDS2TJ223	22KΩ	1
R241	ERDS2TJ334	330KΩ	1
R242	ERDS2TJ472	4.7KΩ	1
R244	ERDS2TJ472	4.7KΩ	1
R260	ERDS2TJ473	47KΩ	1
R261	ERDS2TJ333	33KΩ	1
R262	ERDS2TJ472	4.7KΩ	1
R263	ERDS2TJ682	6.8KΩ	1
R264	ERDS2TJ683	68KΩ	1
R266	ERDS2TJ153	15KΩ	1
R267	ERDS2TJ105	1MΩ	1
R268	ERDS2TJ153	15KΩ	1
R269	ERDS2TJ681	680Ω	1
R270, 271	ERDS2TJ331	330Ω	2
R272	ERDS2TJ153	15KΩ	1
R273	ERDS2TJ473	47KΩ	1
R274	ERDS2TJ333	33KΩ	1
R275	ERDS2TJ472	4.7KΩ	1
R276	ERDS2TJ682	6.8KΩ	1
R277	ERDS2TJ153	15KΩ	1
R279	ERDS2TJ683	68KΩ	1
R280	ERDS2TJ224	220KΩ	1
R281	ERDS2TJ184	180KΩ	1
R282	ERDS2TJ224	220KΩ	1
R283	ERDS2TJ184	180KΩ	1
R284	ERDS2TJ224	220KΩ	1
R285	ERDS2TJ105	1MΩ	1
R286	ERDS2TJ103	10KΩ	1
R287	ERDS2TJ474	470KΩ	1
R288	ERDS2TJ334	330KΩ	1
R289, 290	ERDS2TJ223	22KΩ	2
R291	ERDS2TJ154	150KΩ	1
R292	ERDS2TJ224	220KΩ	1
R293	ERDS2TJ474	470KΩ	1
R295	ERDS2TJ334	330KΩ	1
🄵 R297, ⚠ 298	ERQ14AJ2R0	2Ω, 1/4W, Fuse Type	2
🄵 R299, ⚠ 300	ERD2FCJ4R7	4.7Ω, 1/4W, Fuse Type	2
R301	ERDS2TJ154	150KΩ	1
R302	ERDS2TJ104	100KΩ	1
R303	ERDS2TJ473	47KΩ	1
R304, 305	ERDS2TJ103	10KΩ	2
R306	ERDS2TJ152	1.5KΩ	1
R308	ERDS2TJ104	100KΩ	1
R310	ERDS2TJ473	47KΩ	1
R311, 312	ERDS2TJ103	10KΩ	2
R313	ERDS2TJ152	1.5KΩ	1
R315	ERDS2TJ683	68KΩ	1
R317	ERDS2TJ473	47KΩ	1
R318, 319	ERDS2TJ103	10KΩ	2
R320	ERDS2TJ152	1.5KΩ	1
R322	ERDS2TJ683	68KΩ	1
R324	ERDS2TJ473	47KΩ	1
R325, 326	ERDS2TJ103	10KΩ	2
R328	ERDS2TJ474	470KΩ	1
R329	ERDS2TJ683	68KΩ	1
R331	ERDS2TJ473	47KΩ	1
R332, 333	ERDS2TJ103	10KΩ	2

Ref. No.	Part No.	Description	Per/Set
R335	ERDS2TJ683	68KΩ	1
R336	ERDS2TJ153	15KΩ	1
R337	ERDS2TJ225	2.2MΩ	1
R338	ERDS2TJ472	4.7KΩ	1
R339	ERDS2TJ473	47KΩ	1
R340	ERDS2TJ103	10KΩ	1
R341	ERDS2TJ472	4.7KΩ	1
R342	ERDS2TJ225	2.2MΩ	1
R343, 344	ERDS2TJ104	100KΩ	2
R345	ERDS2TJ473	47KΩ	1
R346	ERDS2TJ333	33KΩ	1
R347	ERDS2TJ104	100KΩ	1
R348	ERDS2TJ473	47KΩ	1
R349	ERDS2TJ333	33KΩ	1
R351~354	ERDS2TJ472	4.7KΩ	4
R357, 358	ERDS2TJ103	10KΩ	2
R363	ERDS2TJ474	470KΩ	1
R364, 365	ERDS2TJ152	1.5KΩ	2
R366	ERDS2TJ331	330Ω	1
R370	ERDS2TJ152	1.5KΩ	1
R371~374	ERDS2TJ100	10Ω	4
R400	ERDS2TJ333	33KΩ	1
R404, 405	ERDS2TJ101	100Ω	2
R406	ERDS2TJ221	220Ω	1
R409, 410	ERDS2TJ472	4.7KΩ	2
R411	ERDS2TJ682	6.8KΩ	1
R412	ERDS2TJ105	1MΩ	1
R413	ERDS2TJ472	4.7KΩ	1
R415	ERDS2TJ473	47KΩ	1
R422	ERDS2TJ152	1.5KΩ	1
R474	ERDS2TJ473	47KΩ	1
R601, 602	ERDS2TJ152	1.5KΩ	2
R603~605	ERDS2TJ102	1KΩ	3
R606, 607	ERDS2TJ222	2.2KΩ	2
R608, 609	ERDS2TJ102	1KΩ	2
R610, 611	ERDS2TJ473	47KΩ	2
R612	ERDS2TJ103	10KΩ } EZ area	1
R613	ERDS2TJ334	330KΩ	1
R614	ERDS2TJ103	10KΩ	1
R615~617	ERDS2TJ334	330KΩ	3

CAPACITORS

Ref. No.	Part No.	Description	Per/Set
○ C1, 2	ECKR1E473ZV	0.047μF	2
C3	ECQG1H102KZ	0.001μF	1
○ C4	ECKR1E473ZV	0.047μF	1
○ C6	ECKR1E473ZV	0.047μF	1
C8	ECEA0JU102	1000μF, 6.3V	1
C9	ECEA1HU010	1μF, 50V	1
(TF)C10	ECQV1H104JZ	0.1μF	1
○ C12	ECCR1H221J	220PF	1
○ C13	ECKR1E473ZV	0.047μF	1
(TF)C16	ECQV1H104JZ	0.1μF	1
(TF)C17	ECQB1H153JZ	0.015μF	1
(TF)C18	ECQV1H104JZ	0.1μF	1
(TF)C19	ECQB1H153JZ	0.015μF	1
(TF)C20	ECQV1H104JZ	0.1μF	1
(TF)C21	ECQV1H473JZ	0.047μF	1
(TF)C22	ECQV1H474JZ	0.47μF	1
(TF)C23	ECQB1H103JZ	0.01μF	1
(TF)C24	ECQV1H104JZ	0.1μF	1
C25	EECF5R5U104	0.1F, 5.5V, Liquid Electrolyte Double Layer	1
○ C27, 28	ECCR1H220J	22PF	2
○ C29	ECKR1E473ZV	0.047μF	1
○ C49, 51	ECKR1E473ZV	0.047μF	2
○ C55	ECKR1E473ZV	0.047μF	1
○ C57	ECKR1E473ZV	0.047μF	1
○ C59	ECKR1E473ZV	0.047μF	1
○ C60	ECCR1H221J	220PF	1
C62	ECEA1CU470	47μF, 16V	1
C63	ECQG1H472KZ	0.0047μF	1
C64	ECQG1H102KZ	0.001μF	1
C65	ECQG1H472KZ	0.0047μF	1
C66	ECQG1H102KZ	0.001μF	1
C67	ECQG1H472KZ	0.0047μF	1
C68	ECQG1H102KZ	0.001μF	1
C69	ECQG1H472KZ	0.0047μF	1
C70	ECQG1H102KZ	0.001μF	1
C71	ECQG1H472KZ	0.0047μF	1
C72	ECQG1H102KZ	0.001μF	1
C73	ECQG1H472KZ	0.0047μF	1
C74	ECQG1H102KZ	0.001μF	1
C75	ECQG1H472KZ	0.0047μF	1
C76	ECQG1H102KZ	0.001μF	1
C77	ECQG1H472KZ	0.0047μF	1
C78	ECQG1H102KZ	0.001μF	1
○ C79, 80	ECCR1H221J	220PF	2
○ C81	ECCR1H681J	680PF	1
C82	ECQG1H472KZ	0.0047μF	1
C83	ECQG1H102KZ	0.001μF	1
C84	ECQG1H472KZ	0.0047μF	1
C85	ECQG1H102KZ	0.001μF	1
C86	ECQG1H472KZ	0.0047μF	1
C87	ECQG1H102KZ	0.001μF	1
C88	ECQG1H472KZ	0.0047μF	1
C89	ECQG1H102KZ	0.001μF	1
C90	ECQG1H472KZ	0.0047μF	1
C91	ECQG1H102KZ	0.001μF	1
C92	ECQG1H472KZ	0.0047μF	1
C93	ECQG1H102KZ	0.001μF	1
C94	ECQG1H472KZ	0.0047μF	1
C95	ECQG1H102KZ	0.001μF	1
C96	ECQG1H472KZ	0.0047μF	1
C97	ECQG1H102KZ	0.001μF	1
○ C98	ECCR1H471J	470PF	1
○ C101	ECKR1E473ZV	0.047μF	1
○ C102	ECCR1H221J	220PF	1
C104, 105	ECEA0JU101	100μF, 6.3V	2
C150~154	ECEA1HU010	1μF, 50V	5
○ C159	ECCR1H471J	470PF	1
C160	ECQG1H222KZ	0.0022μF	1
○ C161, 162	ECCR1H471J	470PF	2
○ C163	ECCR1H101J	100PF	1
C164	ECEA1HU010	1μF, 50V	1
C165	ECQG1H152KZ	0.0015μF	1
C166	ECQG1H222KZ	0.0022μF	1
○ C167	ECCR1H101J	100PF	1
○ C168, 169	ECCR1H471J	470PF	2
C170	ECQM1H223KV	0.022μF	1
○ C171	ECCR1H681J	680PF	1
○ C172	ECCR1H471J	470PF	1
○ C173	ECCR1H151J	150PF	1
C174	ECEA1HU010	1μF, 50V	1
○ C179	ECKR1E473ZV	0.047μF	1
Ⓝ C180	ECEA1HN010S	1μF, 50V	1
○ C181	ECCR1H100J	10PF	1
○ C182	ECCR1H101J	100PF	1
Ⓝ C183	ECEA1HN010S	1μF, 50V	1
(TF)C188	ECQB1H332JZ	0.0033μF	1
(TF)C189	ECQV1H473JZ	0.047μF	1
(TF)C190	ECQB1H102JZ	0.001μF	1
C191	ECEA1EU100	10μF, 25V	1
(TF)C192	ECQV1H104JZ	0.1μF	1
Ⓝ C193	ECEA1HN010S	1μF, 50V	1
Ⓝ C195	ECEA1HN010S	1μF, 50V	1

Ref. No.	Part No.	Description	Per/Set
C196, 197	ECEA1HU010	1µF, 50V	2
C198, 199	ECEA1EU470	47µF, 25V	2
○ C201, 202	ECCR1H220J	22PF	2
○ C203~206	ECCR1H470J	47PF	4
C207	ECEA0JU101	100µF, 6.3V	1
C208, 209	ECEA1EU101	100µF, 25V	2
C210	ECEA0JU101	100µF, 6.3V	1
(MS) C223	ECEA50M2R2R	2.2µF, 50V	1
(TF) C224	ECQB1H222JZ	0.0022µF	1
○ C225	ECCR1H470J	47PF	1
(TF) C226	ECQB1H222JZ	0.0022µF	1
○ C227	ECCR1H470J	47PF	1
C235, 236	ECQG1H472KZ	0.0047µF	2
C240, 241	ECEA1HU010	1µF, 50V	2
○ C244	ECKR1E473ZV	0.047µF	1
○ C246	ECKR1E473ZV	0.047µF	1
○ C254	ECKR1E473ZV	0.047µF	1
○ C316, 317	ECKR1E473ZV	0.047µF	2
C325, 326	ECEA1HU101	100µF, 50V	2
C366	ECEA1HU010	1µF, 50V	1
○ C367	ECKR1E473ZV	0.047µF	1
○ C600	ECCR1H470J	47PF	1
○ C605~609	ECKR1E473ZV	0.047µF	5
○ C610	ECKR1E473ZV	0.047µF } EZ area	1
○ C611, 612	ECCR1H101J	100PF	2
○ C613~618	ECCR1H331J	330PF	6
(TF) C619~624	ECQV1H104JZ	0.1µF	6

JACK JACK CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	SVIGM74LS367	Hex Buffer	1
IC2	SVIGM74LS07	Hex Buffer O.C	1
DIODES			
D1~12	MA165TA5		12
COMPONENT COMBINATION			
Z1	EXBP86472JM	4.7KΩ×6	1
COILS			
L1~5	SLQG15W33APS	Coil	1
L6	SLQG15W11	Coil	1
JACKS			
JK1, 4	SJJG100A	Headphones, EXP Pedul	2
JK2	SJSG1390A	Foot Controller	1
JK3	SJJG400A	Foot Switch	1
RESISTORS			
R1	ERDS2TJ102	1KΩ	1
R2, 3	ERDS2TJ472	4.7KΩ EZ area	2
CAPACITORS			
○ C1	ECKR1E473ZV	0.047µF	1
○ C2	ECCR1H680J	68PF EZ area	1

DSG DIGITAL SOUND GENERATOR CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	SVIGU320C266	2M bit Wave ROM	1
IC2, 3	MN6635	Digital Sound Processor	2
IC4, 5	SVIGBA9221	12 bit D-A Converter	2
IC6, 7	MN74HC4051	8-channel Multiplexer	2
IC8, 9	SVIGM5238L	Operational Amplifier	2
IC10, 11	SVIGM5218L	Operational Amplifier	2
IC12~27	SVIGUPD4066B	Quadruple Bilateral Switch	16
COMPONENT COMBINATIONS			
Z1, 2	EXKS14Z2073	1K/2KΩ, Ladder Network	2
QUARTZ OSCILLATOR			
X1	SVQG49S1600T	16MHz, Quartz Oscillator	1
RESISTORS			
R5, 6	ERDS2TJ471	470Ω	2
R7	ERDS2TJ123	12KΩ	1
R8~11	ERDS2TJ471	470Ω	4
R12	ERDS2TJ123	12KΩ	1
R13, 14	ERDS2TJ471	470Ω	2
R15, 16	ERDS2TJ472	4.7KΩ	2
R17, 18	ERDS2TJ473	47KΩ	2
R21	ERDS2TJ151	150Ω	1
R22, 23	ERDS2TJ331	330Ω	2
R24	ERDS2TJ473	47KΩ	1
R25	ERDS2TJ151	150Ω	1
R26, 27	ERDS2TJ331	330Ω	2
R28	ERDS2TJ473	47KΩ	1
R29	ERDS2TJ151	150Ω	1
R30, 31	ERDS2TJ331	330Ω	2
R32	ERDS2TJ473	47KΩ	1
R33	ERDS2TJ151	150Ω	1
R34, 35	ERDS2TJ331	330Ω	2
R36	ERDS2TJ473	47KΩ	1
R37	ERDS2TJ151	150Ω	1
R38, 39	ERDS2TJ331	330Ω	2
R40	ERDS2TJ473	47KΩ	1
R41	ERDS2TJ151	150Ω	1
R42, 43	ERDS2TJ331	330Ω	2
R44	ERDS2TJ473	47KΩ	1
R45	ERDS2TJ151	150Ω	1
R46, 47	ERDS2TJ331	330Ω	2
R48	ERDS2TJ473	47KΩ	1
R49	ERDS2TJ151	150Ω	1
R50, 51	ERDS2TJ331	330Ω	2
R52	ERDS2TJ473	47KΩ	1
R53	ERDS2TJ151	150Ω	1
R54, 55	ERDS2TJ331	330Ω	2
R56	ERDS2TJ473	47KΩ	1
R57	ERDS2TJ151	150Ω	1
R58, 59	ERDS2TJ331	330Ω	2
R60	ERDS2TJ473	47KΩ	1
R61	ERDS2TJ151	150Ω	1
R62, 63	ERDS2TJ331	330Ω	2
R64	ERDS2TJ473	47KΩ	1
R65	ERDS2TJ151	150Ω	1
R66, 67	ERDS2TJ331	330Ω	2
R68	ERDS2TJ473	47KΩ	1
R69	ERDS2TJ151	150Ω	1

Ref. No.	Part No.	Description	Per/Set
R70, 71	ERDS2TJ331	330Ω	2
R72	ERDS2TJ473	47KΩ	1
R73	ERDS2TJ151	150Ω	1
R74, 75	ERDS2TJ331	330Ω	2
R76	ERDS2TJ473	47KΩ	1
R77	ERDS2TJ151	150Ω	1
R78, 79	ERDS2TJ331	330Ω	2
R80	ERDS2TJ473	47KΩ	1
R81	ERDS2TJ151	150Ω	1
R82, 83	ERDS2TJ331	330Ω	2
R84	ERDS2TJ473	47KΩ	1
	CAPACITORS		
○ C6, 7	ECCR1H220J	22PF	2
○ C8~10	ECKR1E473ZV	0.047μF	3
C11	ECEA1HU010	1μF, 50V	1
○ C12	ECCR1H221J	220PF	1
C13	ECEA0JU101	100μF, 6.3V	1
○ C14, 15	ECKR1E473ZV	0.047μF	2
C16	ECEA1HU010	1μF, 50V	1
○ C17	ECCR1H221J	220PF	1
C18	ECEA0JU101	100μF, 6.3V	1
○ C19	ECKR1E473ZV	0.047μF	1
C20	ECQG1H472KZ	0.0047μF	1
C21	ECQG1H102KZ	0.001μF	1
C22	ECQG1H472KZ	0.0047μF	1
C23	ECQG1H102KZ	0.001μF	1
C24	ECQG1H472KZ	0.0047μF	1
C25	ECQG1H102KZ	0.001μF	1
C26	ECQG1H472KZ	0.0047μF	1
C27	ECQG1H102KZ	0.001μF	1
C28	ECQG1H472KZ	0.0047μF	1
C29	ECQG1H102KZ	0.001μF	1
C30	ECQG1H472KZ	0.0047μF	1
C31	ECQG1H102KZ	0.001μF	1
C32	ECQG1H472KZ	0.0047μF	1
C33	ECQG1H102KZ	0.001μF	1
C34	ECQG1H472KZ	0.0047μF	1
C35	ECQG1H102KZ	0.001μF	1
C36	ECQG1H472KZ	0.0047μF	1
C37	ECQG1H102KZ	0.001μF	1
C38	ECQG1H472KZ	0.0047μF	1
C39	ECQG1H102KZ	0.001μF	1
C40	ECQG1H472KZ	0.0047μF	1
C41	ECQG1H102KZ	0.001μF	1
C42	ECQG1H472KZ	0.0047μF	1
C43	ECQG1H102KZ	0.001μF	1
C44	ECQG1H472KZ	0.0047μF	1
C45	ECQG1H102KZ	0.001μF	1
C46	ECQG1H472KZ	0.0047μF	1
C47	ECQG1H102KZ	0.001μF	1
C48	ECQG1H472KZ	0.0047μF	1
C49	ECQG1H102KZ	0.001μF	1
C50	ECQG1H472KZ	0.0047μF	1
C51	ECQG1H102KZ	0.001μF	1
C52	ECEA0JU470	47μF, 6.3V	1
○ C53, 54	ECCR1H471J	470PF	2
○ C55, 56	ECKR1E473ZV	0.047μF	2
○ C58~61	ECKR1E473ZV	0.047μF	4

DP DRUM PERCUSSION CIRCUIT

Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUITS		
IC1	MN50015PGQ	Gate Array	1
IC2	MN231001PGW	Wave ROM	1
IC3	SVIGHA17008P	8 bit D-A Converter	1
IC4, 6	SVIGMSM4051R	8-channel Multiplexer	2
IC5	SVIGM5238L	Operational Amplifier	1
IC7, 8	SVIGM5218L	Operational Amplifier	2
	COMPONENT COMBINATION		
Z1	EXKS14Z2073	1K/2KΩ, Ladder Network	1
	RESISTORS		
R4	ERDS2TJ472	4.7KΩ	1
R5	ERDS2TJ103	10KΩ	1
R6, 7	ERDS2TJ471	470Ω	2
R8	ERDS2TJ682	6.8KΩ	1
R9, 10	ERDS2TJ222	2.2KΩ	2
R15	ERDS2TJ222	2.2KΩ	1
R16	ERDS2TJ332	3.3KΩ	1
R17, 18	ERDS2TJ682	6.8KΩ	2
R19	ERDS2TJ332	3.3KΩ	1
R20	ERDS2TJ222	2.2KΩ	1
R23, 24	ERDS2TJ683	68KΩ	2
R25~28	ERDS2TJ473	47KΩ	4
	CAPACITORS		
C4	ECEA1HU010	1μF, 50V	1
○ C5, 6	ECKR1E473ZV	0.047μF	2
○ C9	ECCR1H151J	150PF	1
○ C10, 11	ECKR1E473ZV	0.047μF	2
○ C14, 15	ECKR1E473ZV	0.047μF	2
○ C16	ECCR1H221J	220PF	1
○ C17	ECKR1E473ZV	0.047μF	1
○ C18	ECCR1H681J	680PF	1
○ C19	ECCR1H680J	68PF	1
○ C20	ECKR1E473ZV	0.047μF	1
○ C21	ECCR1H221J	220PF	1
○ C23	ECCR1H681J	680PF	1
○ C24	ECCR1H680J	68PF	1
○ C25	ECKR1E473ZV	0.047μF	1

EF EFFECTOR CIRCUIT

Ref. No.	Part No.	Description	Per/Set
	INTEGRATED CIRCUITS		
IC1, 9	SVIGM5218L	Operational Amplifier	2
IC2	SVIGUPD4066B	Quadruple Bilateral Switch	1
IC3~5	SVIGMSM4011	Quadruple NAND Gate	3
IC6~8	MN3006	BBD (128-stages)	3
	TRANSISTORS		
S Q1, 2	2SC2320LFG	2SC1310FG	2

Ref. No.	Part No.	Description	Per/Set
DIODES			
D1~6	MA165TA5		6
SEMI-FIXED RESISTOR			
VR1	EVSG0E1B223A	22KΩ B, BBD Bias	1
RESISTORS			
R1~6	ERDS2TJ474	470KΩ	6
R7	ERDS2TJ153	15KΩ	1
R8	ERDS2TJ103	10KΩ	1
R9	ERDS2TJ153	15KΩ	1
R10	ERDS2TJ223	22KΩ	1
R11	ERDS2TJ153	15KΩ	1
R12	ERDS2TJ103	10KΩ	1
R13, 14	ERDS2TJ153	15KΩ	2
R15	ERDS2TJ223	22KΩ	1
R16	ERDS2TJ103	10KΩ	1
R17	ERDS2TJ223	22KΩ	1
R18~20	ERDS2TJ153	15KΩ	3
R21	ERDS2TJ223	22KΩ	1
R22	ERDS2TJ184	180KΩ	1
R23, 24	ERDS2TJ332	3.3KΩ	2
R25, 26	ERDS2TJ184	180KΩ	2
R27, 28	ERDS2TJ332	3.3KΩ	2
R29, 30	ERDS2TJ184	180KΩ	2
R31, 32	ERDS2TJ332	3.3KΩ	2
R33	ERDS2TJ184	180KΩ	1
R34, 35	ERDS2TJ223	22KΩ	2
R36	ERDS2TJ473	47KΩ	1
R37	ERDS2TJ153	15KΩ	1
R38	ERDS2TJ103	10KΩ	1
R39	ERDS2TJ154	150KΩ	1
R40	ERDS2TJ333	33KΩ	1
R41, 42	ERDS2TJ154	150KΩ	2
R43	ERDS2TJ153	15KΩ	1
R44	ERDS2TJ154	150KΩ	1
R45	ERDS2TJ333	33KΩ	1
R46	ERDS2TJ683	68KΩ	1
R47	ERDS2TJ153	15KΩ	1
R48	ERDS2TJ154	150KΩ	1
R49	ERDS2TJ333	33KΩ	1
R50	ERDS2TJ683	68KΩ	1
R51~54	ERDS2TJ333	33KΩ	4
🄵 R55, 56 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	2
R57	ERDS2TJ473	47KΩ	1
R58	ERDS2TJ102	1KΩ	1
R59, 60	ERDS2TJ103	10KΩ	2
🄵 R61~63 ⚠	ERD2FCG220	22Ω, 1/4W, Fuse Type	3
CAPACITORS			
(TF) C1, 2	ECQV1H334JZ	0.33μF	2
C3~5	ECEA1EU100	10μF, 25V	3
○ C6~11	ECCR1H151J	150PF	6
C12	ECEA1CU470	47μF, 16V	1
○ C13, 14	ECCR1H681J	680PF	2
C15	ECEA1CU470	47μF, 16V	1
○ C16	ECCR1H681J	680PF	1
C17	ECEA1CU470	47μF, 16V	1
○ C18	ECCR1H471J	470PF	1
C19	ECQG1H222KZ	0.0022μF	1
○ C20	ECCR1H101J	100PF	1
○ C21	ECCR1H471J	470PF	1
C22	ECQG1H222KZ	0.0022μF	1
○ C23	ECCR1H101J	100PF	1
C24	ECEA1HU010	1μF, 50V	1
C25	ECEA1CU470	47μF, 16V	1
C26, 27	ECEA1CU101	100μF, 16V	2
C28	ECEA1HU010	1μF, 50V	1
○ C29~32	ECKR1E473ZV	0.047μF	4
C33	ECEA1HU010	1μF, 50V	1

CPC CONTROL PANEL I CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1, 5	SVIGM74LS138	Decoder	2
IC2~4	SVIGM74LS174	Latch	3
TRANSISTOR			
S Q1	2SA1015-GR	2SA933TRS	1
DIODES			
D1~16, 33~52, 26	MA165TA5		36
D17, 18, 20~22	SVDGSEL4417G	LED (green)	6
D19, 23~25, 27~32	SVDGSEL4417R	LED (red)	10
SWITCHES			
	SSHG1045A	Puch Switch	36
RESISTORS			
R1	ERDS2TJ332	3.3KΩ	1
R2	ERDS2TJ103	10KΩ	1
R3~18	ERDS2TJ221	220Ω	16
CAPACITORS			
○ C1, C4~6	ECKR1E473ZV	0.047μF	4

CPSL CONTROL PANEL II CIRCUIT

Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	MN15524PGP	1 chip 4 bit Microcomputer	1
IC2~5	SVIGM74LS07	Hex Buffer O.C.	4
TRANSISTORS			
Q1~4	2SA830B		4
Q5, 6	2SC1047C		2

Ref. No.	Part No.	Description	Per/Set
DIODES			
D2～24, 26～87, 169	MA165TA5		86
LIGHT EMITTING DIODES			
D88～99, 102～166, 168	SVDGSEL4117R	LED (red)	78
D100, 101, 167	SVDGSEL4417G	LED (green)	3
OSCILLATOR			
X1	EF0FC4004A3	4MHz, Ceramic Oscillator	1
SWITCHES			
SW1	SSSG1011A	Transpose	1
	SSHG1045A	Push Switch	83
VARIABLE RESISTOR			
VR1	EVD06510B24G	20KΩ B, Tempo Control	1
RESISTORS			
R1	ERDS2TJ222	2.2KΩ	1
R2～6	ERDS2TJ103	10KΩ	5
R7～10	ERDS2TJ152	1.5KΩ	4
R11～32	ERDS2TJ470	47Ω	22
R33, 34	ERDS2TJ472	4.7KΩ	2
R35	ERDS2TJ222	2.2KΩ	1
R36～59	ERDS2TJ152	1.5KΩ	24
CAPACITORS			
Ⓚ C1	ECEA0JK470	47μF, 6.3V	1
○ C2	ECKR1E473ZV	0.047μF	2
○ C3	ECCR1H471J	470PF	1
○ C4	ECKR1E473ZV	0.047μF	1

AS AMP & POWER SUPPLY CIRCUIT

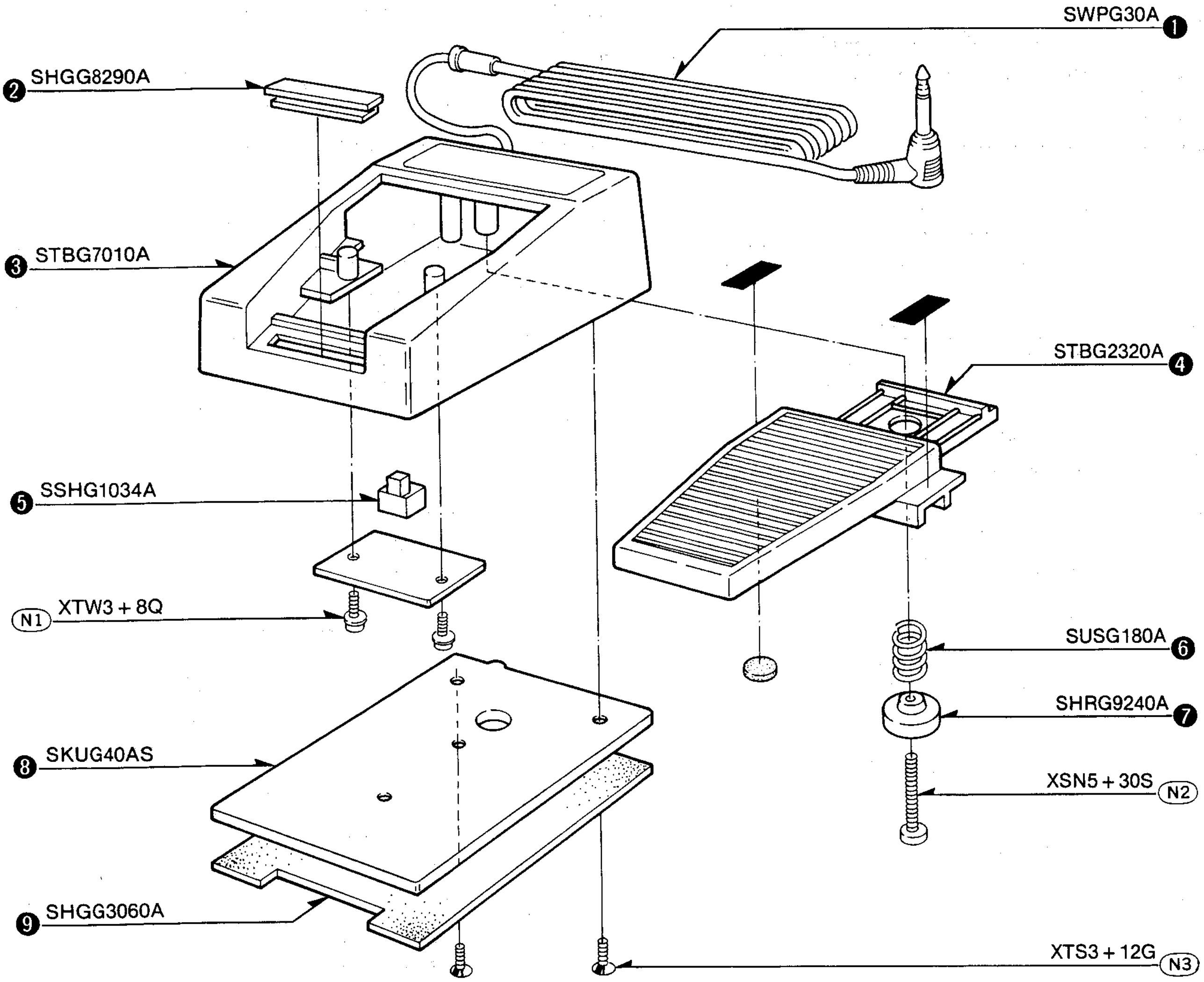
Ref. No.	Part No.	Description	Per/Set
INTEGRATED CIRCUITS			
IC1	SVIGM5291P	Switching Regulator	1
IC2	SVIGM5F7815	Voltage Regulator	1
IC3	SVIGM5F7915	Voltage Regulator	1
TRANSISTORS			
S Q1, 2	2SC2320LFG	2SC1310FG	2
Q5	2SB953AQP		1
DIODES			
D1, 2 ⚠	SVDGERA1502Y	Rectifier	2
D3～6 ⚠	SVDS2V20	Rectifier	4
D7	MA165TA5		1
D9 ⚠	SVDGRK14		1
D10	MA2062LF	Zener	1

Ref. No.	Part No.	Description	Per/Set
COILS & LINE FILTER			
L1 ⚠	SLQG10W2D1	Coil	1
L2 ⚠	SLTGLF3	Line Filter	1
L3	SLCGR8121D	Coil	1
FUSES			
F1 ⚠	XBA2C12TB0	T1.25A, 250V	1
F2, 3 ⚠	XBA2C063TB0	T630mA, 250V	2
RESISTORS			
R1～3	ERDS2TJ103	10KΩ	3
R4	ERDS2TJ102	1KΩ	1
R5	ERDS2TJ101	100Ω	1
R6, 7	ERDS2TJ223	22KΩ	2
R8	ERDS2TJ473	47KΩ	1
R9	ERDS2TJ472	4.7KΩ	1
🄵 R17 ⚠	ERQ14AJ2R0	2Ω, 1/4W, Fuse Type	1
Ⓕ R18 ⚠	ERX1ANJR47	0.47Ω, 1W	1
R19	ERDS2TJ101	100Ω	1
Ⓕ R20 ⚠	ERX1ANJ471	470Ω, 1W	1
R21	ERDS2TJ102	1KΩ	1
R22	ERDS2TJ332	3.3KΩ	1
CAPACITORS			
○ C1 ⚠	ECKCVA1472MF	4700PF, 250V, Line Capacitor	1
C2 ⚠	ECQU2A104MN	0.1μF, 250V, Across the Line Capacitor	1
C3 ⚠	ECQE2A104MW	0.1μF, 250V, Across the Line Capacitor	1
C4, 5	ECEA1VU222	2200μF, 35V	2
C6	ECEA1EU100	10μF, 25V	1
C7	ECEA1HU010	1μF, 50V	1
C10	ECEA1VU100	10μF, 35V	1
C11	ECQG1H102KZ	0.001μF	1
○ C12	ECKR1E473ZV	0.047μF	1
C13	ECEA0JU102	1000μF, 6.3V	1
C14, 15	ECEA1VU100	10μF, 35V	2

■ WIRING PARTS (See wiring connection diagram on page II-1.)

Ref. No.	Part No.	Description	Per/Set
○	SWKG0531SSA	Connector with Wire	1
○	SWKG075SSA	Connector with Wire	1
○	SWKG1073SSA	Connector with Wire	1
○	SWKG1074SSA	Connector with Wire	1
○	SWKG125SSA	Connector with Wire	1
○	SWKG1340SSA	Connector with Wire	2
○	SWKG1341SSA	Connector with Wire	1
○	SWKG1412SSA	Connector with Wire	1

EXPLODED VIEWS OF FOOT SWITCH

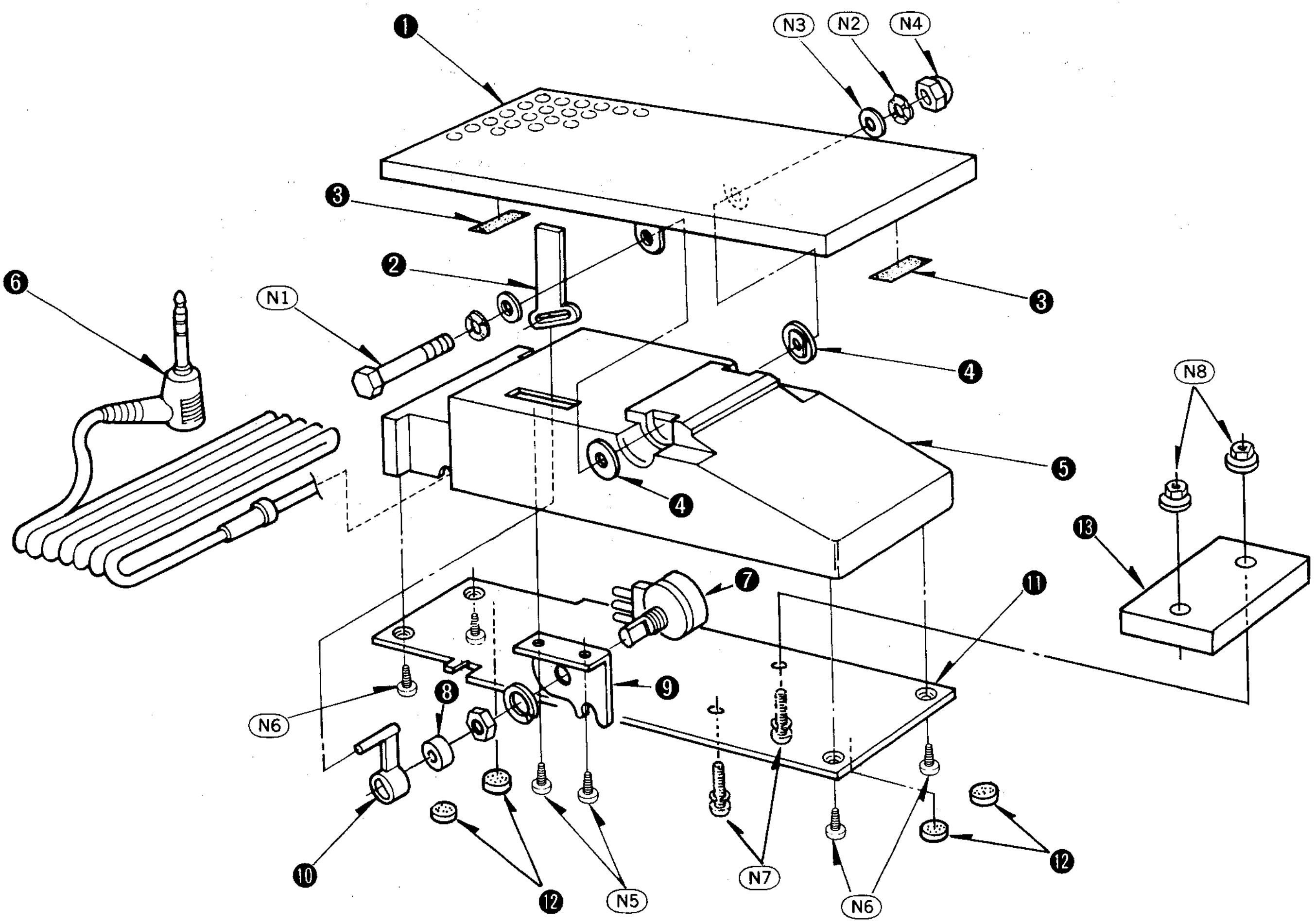

SWPG30A ❶
❷ SHGG8290A
❸ STBG7010A
STBG2320A ❹
❺ SSHG1034A
N1 XTW3 + 8Q
SUSG180A ❻
SHRG9240A ❼
❽ SKUG40AS
XSN5 + 30S N2
❾ SHGG3060A
XTS3 + 12G N3

■ REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Per/Set
1	SWPG30A	Connection Cord, with Plug	1
2	SHGG8290A	Pedal Stopper	1
3	STBG7010A	Pedal Case	1
4	STBG2320A	Pedal	1
5	SSHG1034A	Push Switch	1
6	SUSG180A	Spring	1
7	SHRG9240A	Spacer	1
8	SKUG40AS	Bottom Plate	1

Ref. No.	Part No.	Description	Per/Set
9	SHGG3060A	Cushion	1
N1	XTW3+8Q	Screw	2
N2	XSN5+30S	Bolt	1
N3	XTS3+12G	Screw	2

EXPLODED VIEWS OF EXPRESSION PEDAL

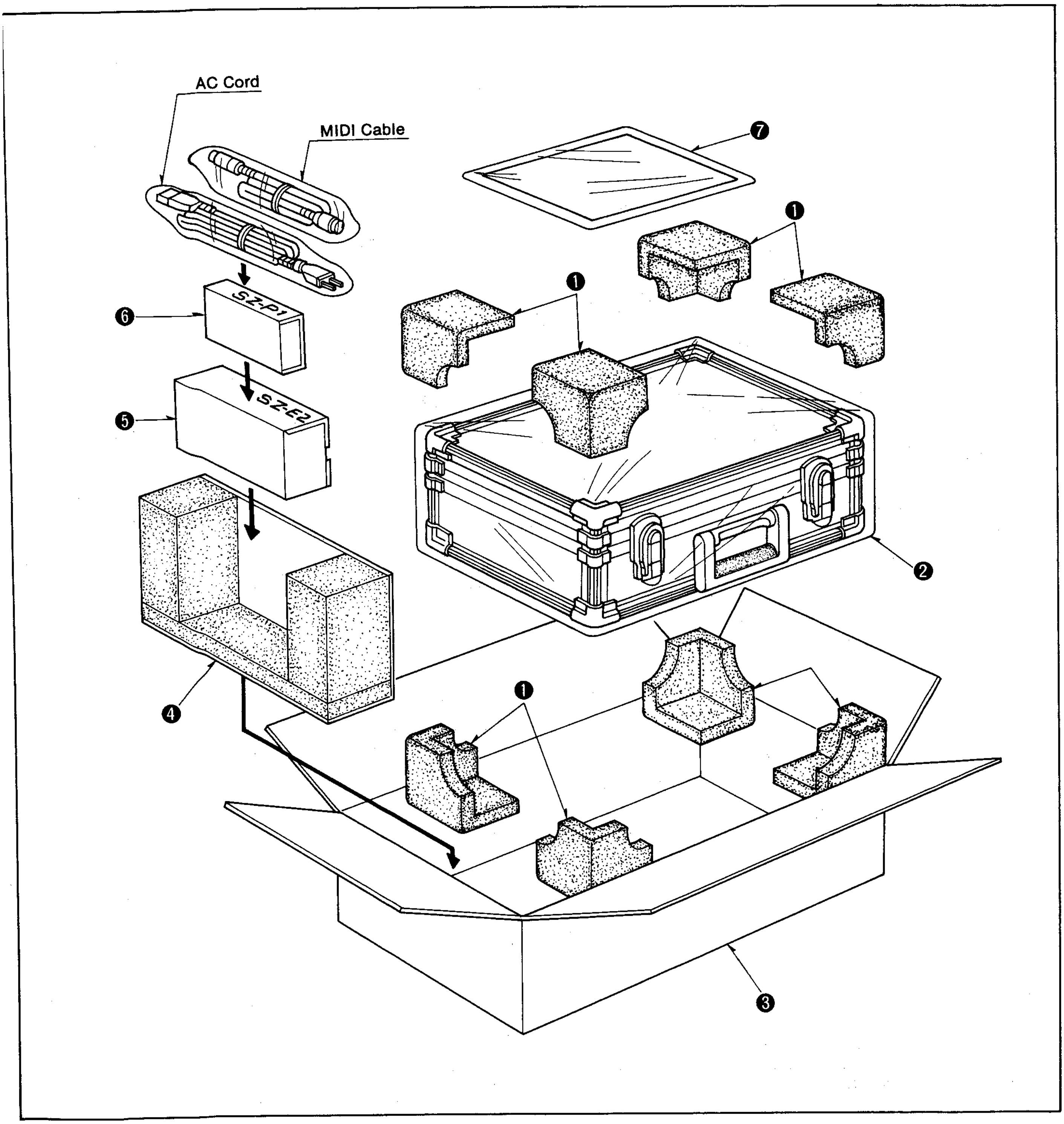


■ REPLACEMENT PARTS LIST

Ref. No.	Part No.	Description	Per/Set
1	STPG2020A	Pedal	1
2	STPG9030A	Expression Lever	1
3	SHSG1780A	Felt	2
4	STPG7004-1	Spacer	2
○ 5	STPG1020B	Volume Case	1
○ 6	SWPG80A	Connection Cord, with Plug	1
○ 7	EVA06820A24G	Variable Resistor	1
○ 8	SHRG4140A	Spacer	1
○ 9	SMKG182A	Volume Holder	1
10	STPG9020A	Volume Lever	1
○ 11	SKUG21A	Bottom Plate	1
○ 12	SHGG3110A	Foot	2
○ 13	STPG9040A	Weight	1

Ref. No.	Part No.	Description	Per/Set
N1	SNEG630A	Bolt	1
N2	SNEG640A	Washer	2
N3	XWG6FZ	Washer	2
N4	XNA6FFZ	Nut	1
N5	XTN3+8G	Screw	2
N6	XTN3+10G	Screw	4
N7	XYN3+C16S	Screw	2
N8	SNE491	Nut	2
○	SQFG21120	Instruction Book	1
	SPHG390A	Polyethylene Bag	1
○	SPNG1867A	Carton Box	1

PACKING


AC Cord
MIDI Cable
❼
❶
❶
❻
SZ-P1
SZ-E2
❺
❷
❹
❶
❸

■ PACKING PARTS

Ref. No.		Part No.	Description	Per/Set
○		SPNGAC30E	Packing Parts Ass'y	1
○	1	SPNG5688A	Corner Pad	8
○	2	SPNG1810A		1
○	3	SPNG1885A	Carton Box	1
○	4	SPNG1886A	Spacer	1
○	5	SPNG1867A	Carton Box	1
	6	SPNG1520B	Carton Box	1

Ref. No.		Part No.	Description	Per/Set
		INSTRUCTION BOOK		
○	7	SQFGA730	Instruction Book	1